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THEORY OF FISCAL POLICY AS APPLIED TO A PROVINCE

by CLARENCE L. BARBER

A study prepared for
The Ontario Committee on Taxation



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Preface

THIS study begins with a general review of the current state of economic thinking on the theory of fiscal policy. This is followed in Chapter 2 by a theoretical consideration of how these general principles apply to the particular circumstances of the Canadian provinces. In Chapter 3 the past cyclical pattern of provincial fiscal policy is reviewed and compared with the comparable behaviour of state and local government in the United States. The recent rapid growth in provincial and municipal debt levels has caused alarm in some quarters. Chapter 4 examines factually the present position of Canadian provincial and municipal debt levels and compares it with the situation in early periods and with the corresponding situation of state and local governments in the United States. To assess the significance of a continued growth in debt at the rates that have recently prevailed, Chapter 5 develops a theoretical model of the growth of debt and income in our economy and evaluates the position of the provinces and municipalities in this context. The study concludes with a brief assessment of the significance of recent developments in federal-provincial relations for fiscal policy in Canada.

In revising this manuscript for publication I have taken advantage of the detailed criticisms prepared by Professors H. G. Johnson and J. M. Buchanan, both of whom read the original manuscript for the Committee, and of the numerous suggestions made by the Committee's Director of Economic Studies, Professor R. M. Clark. In addition, R. M. Burns, Deputy Provincial Treasurer in the Province of Manitoba, and A. W. Johnson, Assistant Deputy Minister of Finance in Ottawa, were kind enough to read and criticize my original draft. To all of these people I owe a very substantial debt. The final responsibility for the report is, of course, my own.

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CHAPTER 1

The Theory of Fiscal Policy

FISCAL policy can be defined as the use of government taxing, borrowing and spending to influence the level of economic activity. Tax rates may be increased and expenditures decreased with a view to slowing down the rate of economic activity, or tax rates may be reduced and expenditures increased to stimulate the economy. Or again, special tax arrangements may be devised that are designed to stimulate private investment or other expenditures. Since fiscal policy is but one arm of government economic policy, if it is to be effective its use must be co-ordinated skilfully with other policy weapons such as monetary policy, debt-management policy, and commercial policy.

Although government economic policy may have many and varied objectives, there is now broad agreement that primary emphasis should be given to the following three major objectives:

1. low levels of unemployment;
2. reasonable stability of prices;
3. an adequate rate of economic growth.

Each of these objectives will be defined in more detail below and some consideration will be given to how government fiscal policy can be used to attain them. Other policy objectives that are often emphasized are an efficient allocation of resources, a sound balance-of-payments position, adequate provision for health and welfare, and a fair and equitable distribution of income.

At times these policy objectives will conflict and a choice will have to be made as to which objective is to receive priority. For example, measures designed to increase the level of employment may cause prices to rise. Or measures designed to provide a larger amount of welfare for the Canadian people may slow down the economy's rate of growth. A successful use of fiscal policy to attain these conflicting objectives requires that special attention be directed toward minimizing any conflicts that arise.

A BRIEF HISTORY OF THE ROLE OF FISCAL POLICY

The use of variations in government revenues and expenditures to affect the economy implies that at times the government budget will be running a substantial deficit, at other times a large surplus. This deliberate unbalancing of the government budget in order to balance the economy as a whole conflicts with strongly held views on the part of the general public with respect to proper budgetary procedure. The average citizen still believes—and here his view is shared by much of the daily press—that a government should attempt to maintain a balance between its revenues and its expenditures. This view that a balanced budget is the

proper guide for government policy has been held throughout most of our recorded history and has only recently begun to give way to the modern and more scientific view that the budget should be used vigorously and unashamedly to attain the goals the people regard as desirable.¹

That the economy of the Western World continued to function tolerably well despite this adherence to the balanced-budget doctrine was due partly to the fact that prior to the decade of the 1930's government expenditures were much smaller in relation to our national output than they are today, partly to the fact that adherence to the balanced budget tended to break down in practice during periods of depression. It is fortunate that these breakdowns did occur, for strict adherence to the balanced-budget principle when an economic decline is under way will simply drive the economy down further still. Higher tax rates leave less income in private hands and thus reduce private spending, output, and employment. Similarly, reductions in government expenditures cause income and employment to fall and this in turn leads to a further decline in spending and output.

Adherence by economists to the belief that the government should always maintain a balanced budget was undermined during the 1930's by the theoretical writings of the late Lord Keynes and by the severity of the Great Depression. The demise of this belief was hastened by a recognition of the ease and the speed with which long-standing and severe unemployment disappeared under the impact of the war-induced government spending. Indeed, it is now apparent that the attempts that were made to balance government budgets in the early stages of the Great Depression by increasing tax rates and cutting back on less essential government expenditures simply drove the economy deeper into depression. Moreover, by the late thirties, in both Canada and the United States, tax rates were so much higher than they had been in 1929 that governmental budgets were acting as a large and effective brake on economic recovery.² Thus, whenever income rose in this period, whether as a result of increases in capital investment or other types of expenditure, the rapid growth in government revenues relative to government expenditures pushed the budgetary position of all government toward a surplus position and effectively dampened the growth of output and employment.

The experience of the 1930's can be summarized briefly as follows. In the early stages of the Depression, state and local governments in both Canada and the United States maintained and even increased their expenditures, particularly for public works, in order to help ease the burden of mounting unemployment. Federal governments in both countries also found themselves faced with rapidly rising deficits as tax revenues dwindled and expenditures for relief and other purposes mounted. But as the Depression deepened, governments in both countries, in accordance with the philosophy prevailing at that time, raised tax rates sharply

¹Lewis H. Kimmel gives a useful historical survey of budgetary attitudes in the United States. See *Federal Budget and Fiscal Policy, 1789-1958* (Washington: The Brookings Institution, 1959.)

²For a description of the changes in tax rates during this period in Canada see J. H. Perry, *Taxes, Tariffs and Subsidies* (Toronto, University of Toronto Press, 1955), Volume I, Part VI. The effect of government fiscal policy in the United States during this period is effectively analysed by E. C. Brown. See "Fiscal Policy in the 'Thirties: A Reappraisal", *American Economic Review*, December 1956, 857-99.

in an effort to reduce if not eliminate their deficits. In Canada, for example, tax revenue as a percentage of gross national product increased from around 13 per cent in 1929 to over 18 per cent by 1933. After about 1931 provincial (state) and municipal governments in both countries found it necessary to reduce their level of spending sharply as mounting debt levels made it difficult or impossible to continue their public works program.

With the election of the Roosevelt administration in the United States the federal government in that country undertook a more active fiscal policy. Nevertheless, it represented much less of an application of modern fiscal theory than is still generally believed. For at the same time that the New Deal government was launching a major program of public works and a parallel program of work relief projects, it was also raising taxes and cutting back on some other expenditures in accord with its election promise that it would balance the budget. Moreover, declining expenditures at the state and local level offset much of the favourable effects of the federal measures. As a result, throughout the period from 1933 to 1939 the net contribution of all governments to over-all demand was, on the average, not much larger than it had been in 1929. Thus, although federal expenditures did succeed in helping to raise incomes from the low levels to which they had fallen in 1933, they were never large or effective enough to promote a return to high levels of employment. As Brown has observed "Fiscal policy, then, seems to have been an unsuccessful recovery device in the 'thirties—not because it did not work, but because it was not tried."³ This statement applies to Canada, too, perhaps to an even greater extent. For if the failure of fiscal policy in the United States was due to the fact that it was not applied on an adequate scale, in Canada there is little evidence that either of the two administrations that were in power in Ottawa during the thirties made any significant attempt to apply fiscal policy at all. In the main, Canadian fiscal policy at the federal level was confined to providing a minimum amount of essential relief, while waiting for the economy to recover on its own.

With the war's end governments the world over determined that the economy should not be allowed to lapse once again into a state of severe unemployment. The ease with which unemployment had been eliminated in the face of the massive government war expenditures and the success that governments had had in controlling the economy in war time convinced many people that severe unemployment was unnecessary and that governments should be prepared to take strong steps to prevent its appearance. Thus in Canada, at the end of the war, the federal government issued a White Paper committing the government to a policy designed to maintain a high level of employment and a stable level of prices. Similar commitments were made by many other governments.

It was recognized at that time that this might involve the government in operating at a deficit in periods of economic slack. But it was hoped that this would be offset by budgetary surpluses during more buoyant economic periods, with the result that the government debt would not increase. In other words, it was believed that the government should operate a counter-cyclical fiscal policy,

³*Ibid*, 863.

increasing its expenditures and reducing taxes in periods of economic slack and raising tax rates and deferring expenditures when the over-all level of demand threatened to become excessive.

In fact, in the early post-war years the problem faced by most governments was that of inflation rather than unemployment. And in Canada, the federal government did pursue a moderately restrictive policy for the first decade after the war, recording a surplus in every year but one over the period 1947 to 1956. In addition, over-all budgetary policy was supplemented by a number of special measures. Thus, in the immediate post-war years a policy of gradual price decontrol was pursued while capital investment was encouraged by means of a special provision for accelerated depreciation. Export industries were aided by loans to Britain and other European countries. And house construction was encouraged under the provisions of the National Housing Act. Again, after the outbreak of the Korean War, higher taxes to help prevent inflation were supplemented by provision for depreciation on a deferred basis only for non-essential types of investment. At a later date the federal government's participation in the construction of the St. Lawrence Seaway and provision of a loan to help construct the Trans-Canada gas pipeline served to increase the over-all level of spending in Canada but did so in a period when capital spending was already at a record level. Thus, the spending involved in these projects added to the inflationary pressure that was already affecting the Canadian economy and indirectly led to an increased inflow of foreign capital and an increase in Canada's external indebtedness.

Unemployment did not become a serious problem in either Canada or the United States until a general slowdown in the North American economy set in about the middle of 1957. Unemployment had risen sharply in both countries in the recession of 1953-54 but the recession was short-lived and recovery was rapid. A rapid increase in the supply of money and a significant fall in interest rates appear to have been prime factors in stimulating recovery in both countries, with an increase in residential construction expenditures playing a major role in getting recovery under way.

In Canada the federal government reacted to the recession of 1957-58 by reducing tax rates and increasing expenditures. As a result, by the time the recession had reached its low point in the second quarter of 1958 the government deficit was in excess of \$940 million in terms of its seasonally adjusted annual rate (on a National Accounts basis). From this point on, however, despite the persistence of heavy unemployment, the government pursued a relatively conservative fiscal policy. There was little further increase in expenditures over the next two years, and tax rates were increased substantially in the spring of 1959. As a result, by the second quarter of 1960 the federal budget had begun to show a small surplus (in terms of the National Accounts budget seasonally adjusted at annual rates) even though the unemployment rate was still about 7 per cent. Indeed, over this two-year period the increase in federal revenues amounted to almost half of the increase in gross national product.

Although some economists have prescribed still larger deficits as a remedy for the unemployment that existed in this period, it seems doubtful that this was the appropriate solution to the problem. For at the time the recession of 1957-58

got under way, capital spending in Canada was still very high—more than 24 per cent of gross national product—and the current account deficit in the balance of payments amounted to about \$1.5 billion. This means that the total market for goods and services in Canada—that is, final spending by consumers, government and business—was in excess of Canada's gross national product by \$1.5 billion. A diversion of even a moderate amount of this spending away from imports and toward the products of Canadian firms would have easily stimulated a much higher level of income in Canada. With a freely fluctuating exchange rate in effect, the appropriate method of securing this result would have been a much easier monetary policy. Such a policy would have discouraged the inflow of capital funds, this in turn would have induced a decline in the value of the Canadian dollar, and this in turn would have provided an incentive for a diversion of expenditures away from imports and toward Canadian products. It would also have made Canadian exports more competitive in foreign markets. The outcome of such a policy would have been a higher level of income and employment in Canada, a larger volume of Canadian savings, a reduced dependence on the inflow of foreign capital, and a lower level of international indebtedness.

Unfortunately the easier monetary policy required to secure this favourable result was not forthcoming. Instead a restrictive monetary policy on the part of the Bank of Canada was reinforced by the large conversion loan operation carried out in the summer of 1958. Under the conversion loan Canadian bondholders were induced to turn in their relatively short-term Victory bonds for the much longer-term and less liquid conversion loan securities. The result was a sharp increase in the whole level of interest rates in Canada. This encouraged additional borrowing in the United States and other foreign markets and helped sustain an overvalued Canadian dollar throughout most of the period from 1958 to 1961.⁴

In the United States during this period monetary and fiscal policy was also moderately restrictive and many critics have blamed these policies and the excessive fear of inflation that gave rise to them for the short and unsatisfactory upswing from 1958 to 1960.⁵

Having brought this brief historical survey of fiscal policy down to the very recent past, it is now convenient to turn to a general survey of the present state of thinking on fiscal policy. First, however, let us consider in somewhat more detail our three major fiscal policy objectives.

THE OBJECTIVES OF FISCAL POLICY

1. *Low Levels of Unemployment*

In considering what is a reasonable unemployment objective, it is useful to distinguish between four different types of unemployment: frictional, seasonal, structural, and cyclical or lack-of-demand unemployment. In a country as widely

⁴I have described developments in both monetary and fiscal policy during this period in some detail elsewhere. See *Monetary, Fiscal and Exchange Rate Policy*, Working Paper for the Banff Business Policies Conference, September 1963 (mimeographed).

⁵See, for example, J. M. Culbertson, *Full Employment or Stagnation* (New York: McGraw-Hill Book Company, 1964), Chapter 11, and Gunnar Myrdal, *Challenge to Affluence* (New York: Pantheon Books, Random House, 1962).

dispersed as Canada attention must also be given to the regional pattern of unemployment.

Frictional unemployment consists of the minimum amount of unemployment, perhaps 1 per cent of the labour force or less, which continues to exist even under the most favourable circumstances. Even in a keen labour market people who leave one job may be unemployed for a short period before they choose another one. New entrants to the labour force may look around for a period of time before selecting a position. An effective employment service can help keep this unemployment down to a minimum but can never eliminate it entirely. In Canada, where many industries have a pronounced seasonal employment pattern, this type of unemployment is probably appreciably higher than in countries that are less subject to seasonal influences.

Seasonal unemployment results from the fact that the over-all demand for labour is much higher at some seasons of the year than it is at others. The seasonal peak in labour demand in Canada comes in the summer and early fall, the low point during the first quarter of the year. While some workers who are employed during the summer period of peak demand retire from the labour force during the winter months, many look for jobs elsewhere but are unable to find them. On the average over the period 1953 to 1960 in Canada unemployment in the first year was more than twice as high as it was in the third quarter of the year.⁶ The construction industry has a particularly marked seasonal pattern and it has been estimated that some 40 per cent of all those unemployed in midwinter for seasonal reasons are workers who are normally employed in this industry. Forestry, fishing, agriculture, and some sectors of the service industry also have marked seasonal employment patterns. Seasonal unemployment is particularly severe in the Maritimes and Quebec. It has been much less important in Ontario. Over the period 1956-60, if employment could have been maintained on a year-round basis at the level reached in the third quarter of the year the over-all unemployment rate would have been reduced from 5.6 per cent to 3.8 per cent. For Ontario, the corresponding reduction would have been from 4.2 per cent to 3.4 per cent. In brief, for this period, seasonal unemployment amounted to 1.8 per cent of the labour force in all Canada, and to .8 per cent in Ontario.

Structural unemployment is unemployment that reflects a lack of adaptation on the part of the labour force in terms of location or skills to the demands of the labour market. Thus, unemployed labour in the Atlantic provinces may not move easily or promptly to make up a shortage of labour in British Columbia. Similarly, labour with little education or training or labour whose skills are obsolete may find great difficulty in securing employment even though there is a general shortage of skilled labour, and workers in some trades and professions are under great inducement to work overtime. In some cases, too, a lack of skilled or professional labour may prevent the initiation of new projects that could provide employment for less skilled people. In an age of automation and rapid technological change

⁶These and other data in this paragraph are taken from the *Report of the Special Committee of the Senate on Manpower and Employment* (Ottawa, Queen's Printer, 1961), 69-76.

many observers contend that structural unemployment is almost certain to increase unless special efforts are made to reduce or eliminate it. However, the evidence available suggests that no significant increase has taken place up to this time.

Cyclical or lack-of-demand unemployment is unemployment that arises because there is insufficient market demand to provide jobs for all people who are actively seeking employment and who do not fall into the three categories of unemployment listed above, namely, frictional, seasonal, and structural. It is the type of unemployment that can be fairly readily eliminated if effective fiscal or other policy measures are taken to increase the general level of market demand. Government economic policy should aim to eliminate this type of unemployment entirely. In practice, in view of the ebb and flow to which private spending is subject, this objective will not be completely attainable. However, it should be possible to reduce cyclical unemployment, on the average, to a very low level.

Given the fact that a "low level of unemployment" is one of the primary objectives of government fiscal policy, what is a reasonable goal to aim at? Opinions on this question vary widely. Many Western European countries have succeeded in achieving an unemployment level amounting to less than 2 per cent of the labour force. However, most of these countries are more compact and homogeneous and are less subject to seasonal variations in employment than Canada is. Moreover, most of these countries have had a labour force that has been growing much more slowly than has been true for Canada. A more reasonable objective would be the level of unemployment that existed in Canada for the first decade after the War. In this period unemployment averaged only 3.2 per cent of the labour force, well below its level of from 5 to 7 per cent in recent years. On the other hand, the United States Council of Economic Advisers has set a level of 4 per cent unemployment as their immediate objective. Even this is well below the 5 to 6 per cent unemployment rate that has prevailed in the United States for the past six years and that still persists.

Any choice of goals here depends in part on the value that is set on price stability as opposed to unemployment. For beyond some not very clearly defined point, any further reduction in unemployment, if obtained by further stimulation of the over-all level of demand, will be achieved at some cost in terms of rising prices. The choice will also depend on the degree to which it proves possible to reduce seasonal and structural unemployment by fiscal and other measures. This question will be considered further below. Let us turn now to a consideration of the price stability goal.

2. Reasonable Stability of Prices

What do we mean by reasonable stability of prices? And on what basis do we make a choice between price stability and unemployment? These are questions to which there are no clear and simple answers.

However, it is clear that much of the price increase that has occurred over the past twenty-five years has been due to the effects of major wars. Thus, as a result of World War II and the Korean War the Canadian consumer price index increased by 85 per cent between 1939 and 1952. Since then the rise in prices in Canada has been much more modest, the consumer price index having risen

about 15 per cent between 1953 and 1963 or an average of about 1.5 per cent per year. Does our experience of the last ten years represent reasonable price stability?

My answer to this question would be yes. I base this conclusion on several grounds. First, there is some reason to believe that the consumer price index may overstate the amount of price rise by as much as 1 to 2 per cent per year because of its failure to take adequate account of improvements in quality that have occurred in many products or to make any allowance for the addition to welfare that results when completely new products become available.⁷ Thus, in fact, prices may be no higher today than they were a decade ago. Further, high levels of unemployment tend to impose severe losses on certain groups in our society. Thus, there is evidence that unemployment rates are particularly severe among the unskilled, the aged, and the very young, a group who will be entering the labour market in increasing numbers in the next few years.⁸ In contrast a relatively modest rise in prices may not impose severe hardship on anyone. Retired people will find the purchasing power of their pensions reduced, but this may be offset by the increase in pensions paid from the old age security fund. And upward revisions in these pensions may be more readily secured if income and employment and hence government revenues are maintained at a high level. Moreover, with the spread of mutual funds and equity type pension plans more and more people are acquiring some protection against the effects of rising prices. Higher interest rates induced by inflation provide similar protection. Then, too, the new Canada Pension Plan incorporates an automatic protection against the effect of rising prices. Finally, it should be noted that the losses from moderate inflation are mainly those involved in a less equitable distribution of income, whereas the potential gains from increased employment include those of higher output as well as a more equitable distribution of income.

Thus, if the fiscal measures needed to reduce unemployment to, say, 3 per cent of the labour force result in a rise in the consumer price index of from 1 to 2 per cent per year, I would say that the gain in terms of employment clearly outweighs the cost in terms of rising prices. This is particularly true if there is no assurance from year to year that the price rise will continue. Some economists argue that price increases of up to 3 per cent per annum should be accepted if necessary in order to attain a low level of unemployment.⁹ Others would place a strong emphasis on avoiding price increases of even 1 to 2 per cent a year.¹⁰ Both would agree that there is a need to devise new policy measures which will reduce unemployment levels and yet maintain comparative price stability.

⁷This is also the conclusion reached by a Special Committee on Price Statistics set up by the United States President. See *The Price Statistics of the Federal Government* (New York: National Bureau of Economic Research, 1961). A similar view is taken by J. M. Culbertson, *Full Employment or Stagnation*, Chapter 6. A. Asimakopulos has argued that the quality factor has been less important in Canadian price indexes. See *The Reliability of Selected Price Indexes as a Measure of Price Trends* (Ottawa: Queen's Printer, 1963).

⁸See *Report on Manpower and Employment*.

⁹See Gunnar Myrdal, *Challenge to Affluence*, 72.

¹⁰See G. Haberler, *Inflation: Its Causes and Cures*, revised edition (Washington: American Enterprise Association, 1961).

3. *An Adequate Rate of Economic Growth*

As a goal of economic policy, the rate of economic growth has only recently begun to receive serious attention from economists and others. In the immediate post-war years a primary concern of governments was to avoid a relapse into the severe unemployment of the 1930's. The most urgent practical problem was the prevention of inflation. But as the years passed, and as price levels began to stabilize and severe unemployment did not reappear, attention turned increasingly to the rate of economic growth. In some measure this emphasis on economic growth reflected the fear that the Western World was falling behind the growth rates achieved in Russia and other communist countries. The great concern with economic growth in underdeveloped countries also helped to draw the attention of more advanced countries to this question. The importance of growth was further underlined by the marked decline in the rate of growth of the North American economy which set in about 1957. Finally, in the United States and Canada the rapid rate of growth achieved by a number of countries in Western Europe after the formation of the European Economic Community brought this question into more prominence.

What do we mean by an adequate rate of economic growth? How can it best be measured? And what are some of the measures that can be taken to achieve it? Let us consider each of these questions in turn.

It seems clear that an adequate rate of economic growth must satisfy two criteria. It must be rapid enough to provide employment for the normal annual growth in the labour force and to reabsorb in productive employment the workers who are released from existing jobs as a result of technical progress. In addition, it must provide these jobs at productivity levels that will permit rising standards of living for all Canadians.

Rising standards of living imply a rising level of productivity in the economy. But at what rate? One criterion here is the record of our past achievement. Over the past thirty or forty years output per employed person has been rising in both Canada and the United States at an annual rate of about 2 per cent per annum. Output per man-hour has been rising more rapidly than this. But some of the productivity gains have been taken in the form of increased leisure, a shorter work-week, and longer vacations. Presumably a continuation of this pattern would satisfy most Canadians. Since employment is expected to grow at a rate of from 2.5 to 3 per cent, this would require an over-all growth rate in national product of between 4.5 and 5 per cent per annum.

Because the rate of economic growth has only recently begun to receive serious attention from economists, there is as yet little agreement on the precise conditions that are most favourable to economic growth. It is clear that a high and continuously expanding volume of demand is essential if a growing labour force is to be effectively employed. There is also general agreement that a high and growing level of capital investment is a significant factor in economic growth. Capital investment has a dual role to play. On the one hand, it provides the new capital equipment necessary to incorporate new techniques and to give productive employment to a growing labour force. On the other hand, by employing the

savings of business firms and individuals it helps maintain the high level of demand which is essential if unemployment is to be avoided.

But many other considerations play an important role in determining the rate of economic growth. The energy, skill and training of the labour force and in particular of the managerial group is a key factor. The amount of resources a society devotes to research and education is important. The willingness of management and labour to adopt new, more productive methods is a significant factor. Important too is the avoidance of measures to prop up or protect inefficient or declining industries. This implies a willingness to accept and adjust to increases in international competition, to shift resources out of industries that are no longer competitive and into more productive lines. These are but a few of the many factors involved.

The Current State of Fiscal Theory

Within the past three decades economists' views as to the fiscal policy a government should follow have undergone a rapid change. With the abandonment of the belief in a balanced budget economists at first suggested that governments should follow a counter-cyclical or compensatory fiscal policy. According to this view governments would run deficits in periods of economic slack, thus adding to total demand. In periods of strong economic expansion these deficits would give way to economic surpluses which would serve to restrain over-all demand. Over the cycle as a whole, it was hoped, these deficits and surpluses would balance out and hence the size of the national debt would remain substantially unchanged, or at most, would rise in line with the national output.

In periods of recession the government could either cut taxes or increase its expenditures or do both. On the tax side there were various taxes that could be cut—the personal income tax, the corporate income tax, sales and excise taxes. On the expenditure side, the government could increase transfer payments such as old age pensions and family allowances or it could increase expenditures on goods and services such as highways, airports and dams. The advantages of a tax cut were that it could be implemented quickly and it would affect all sectors of the economy. A reduction in the personal income tax would leave more money in the hands of the consumer and this would lead to an increase in consumer spending. Lower corporate income taxes would leave more money in the hands of the corporation and this would lead, it was argued, to increased spending on capital investment. A reduction in sales taxes, on the assumption that the tax reduction results in lower prices, would enable the consumer to buy more goods with his dollar and, if there was an expectation that the tax cut might be reversed in the future, would induce him to do so promptly. In theory, the tax cut could be reversed quickly if the recession shortly gave way to expansion. In terms of practical politics, this reversal might be difficult to achieve. To avoid this difficulty some economists have suggested a tax holiday as a method of giving a temporary boost to the economy. Under this plan all taxes due under the personal income tax, or in certain tax brackets would be cancelled for three, six or nine months, and deductions at the source would be reduced proportionately. A possible disadvan-

tage of such a plan is that the tax reduction might be treated as a windfall and saved.

On the other hand, to the degree that the recession creates unemployment in particular localized areas and for workers with particular trades or skills (unemployment usually rises sharply in the construction industry), there is an advantage in increasing government expenditures in the public works area since this enables the government to provide employment where it is most needed and for the type of worker that is most subject to unemployment. The effects of an increase in government expenditures on goods and services are also more certain, since at least some part of any tax cut is likely to be saved. The disadvantage of public works projects is that unless they have been planned in advance they may take a long time to get under way, and even with advance planning some time will be required to call and let tenders. In Canada major projects in many parts of the country cannot be started in the winter months, and once under way they cannot easily be discontinued. Thus, they may continue to add to employment in a period when the economy has fully recovered and no longer needs additional support. It has often been suggested that the government should create and maintain a shelf of fully planned public works which could be taken off the shelf quickly when the need arose. One difficulty here is that many types of government construction—hospitals, schools, waterworks and so on—cannot be easily deferred. However, there are undoubtedly many kinds of public works projects that could be deferred. This is particularly true in the field of road construction.

The counter-cyclical approach to fiscal policy has been criticized on the grounds that it abandons one of the basic merits of the balanced-budget approach, that of providing a check on the growth of government spending. If every increase in government spending has to be justified in terms of the increase in tax rates needed to pay for it, the people will be less willing to support such an increase. In addition, it has been argued, the counter-cyclical approach may be destabilizing rather than stabilizing in practice. Thus, because of our inability to forecast economic developments accurately, the measures taken to offset a recession may end by adding additional fuel to an inflationary expansion.

As an alternative it has been proposed that the government adopt a set of tax rates and expenditures that would yield a small surplus at full employment.¹¹ In periods of recession, no changes in tax rates or expenditure policies would be made but the budget would automatically tend to develop a deficit that would help check the decline in income. Tax revenues would fall and expenditures under some programs, such as the unemployment insurance plan, would rise. In periods of economic boom when private spending tended to become excessive, revenues would rise, expenditures would decline, and the government budget would automatically generate a surplus. This characteristic of the budget is referred to as built-in-flexibility, and it was suggested that an attempt be made to deliberately plan for a government budget with a high degree of built-in-flexibility. In many countries, the increased importance of taxes on personal and corporate income

¹¹This policy was first advanced in a major way by the Committee for Economic Development. See *Taxes and the Budget: A Program for Prosperity in a Free Economy* (New York: Committee for Economic Development, 1947).

and the adoption of unemployment insurance schemes has given government budgets a much higher degree of built-in-flexibility than they had formerly.

A major advantage of such an approach, it was claimed, was that it went into effect automatically, thus avoiding some of the lags involved in the counter-cyclical approach, or more generally in what is now called discretionary policy, that is policy that only takes effect at someone's discretion. Discretionary policy, it was argued, involves three major lags. First there is the recognition lag, the time that elapses between the time the economy turns down and the time when sufficient statistical indicators of this fact become available to enable the government to recognize that a down-turn has occurred. Second, there is the administrative lag, the time that elapses between the point where a down-turn is recognized and the date at which some policy action—a tax cut or an increase in expenditures—takes place. Finally, there is the operational lag, the time that elapses between the policy action and the date at which it begins to affect the economy in a substantial way. The first of these two lags are sometimes called inside lags because they occur inside the government. The last is called an outside lag. The built-in-flexibility approach avoids the inside lags because it goes into effect automatically as soon as a down-turn commences. Moreover, it is argued, this approach makes it possible to retain the safeguard provided by the balanced budget against excessive increases in government spending. Any additional government expenditures must be matched by increased tax rates which will provide an equivalent volume of tax revenues at a full employment level of income.

Still a third approach, called formula flexibility, proposes that changes in tax rates or expenditures be made in accordance with some fixed formula. To some degree, this proposal is designed to reinforce the effects obtained from built-in-flexibility. Thus a tax cut of a given size might go into effect whenever the unemployment rate exceeded 5 per cent for two successive months, with a further cut to be made if the unemployment rate continued to rise and exceeded some further level. A major disadvantage of this approach, and in some degree of the built-in-flexibility approach as well, is that it makes insufficient allowance for the varying circumstances under which increased unemployment may occur and thus for the possibility that it may be desirable to vary the relative degree to which different policy weapons are used. Thus, in some circumstances, such as was true for Canada in the period from 1958 to 1961, it may be desirable to place a heavy emphasis on monetary policy and less emphasis on fiscal policy. Moreover, if unemployment and inflation occur at the same time the formula approach may give no clear answer as to what is the proper policy to follow.

It is now clear that the merits of the built-in-flexibility approach were exaggerated by their first proponents. For in a growing economy there may often be a tendency for tax revenues to grow more rapidly than government expenditures. This is particularly true of a country such as the United States where a heavy reliance is placed on the personal income tax as a source of government revenue.¹²

¹²It has been estimated that with gross national product growing at a rate of 3.5 per cent per annum at full employment, federal revenues in the U.S. now grow about \$5 billion per year. See R. Solomon, "The Full Employment Budget Surplus as an Analytical Concept", *Proceedings*, Business and Economic Statistics Section, American Statistical Association, 1962, 107.

Moreover, the rate at which government revenues grow may vary depending on the degree to which any increase in income is made up of rising prices and wage rates, increased employment at existing wages, higher wages as a result of rising productivity, or some combination of these three. If the budgetary surplus at full employment tends to grow constantly it will be necessary to readjust the budget at frequent intervals. Otherwise, the increasing full employment budgetary surplus will exert such a strong check on any upswing as to make a full employment level of gross national product very difficult to achieve. But if periodic decisions have to be made as to how to dispose of a constantly reappearing surplus, whether by tax cuts or increased government expenditures, then a large measure of discretion must be reintroduced. Both the automatic nature of the policy and the fiscal discipline provided by matching all new expenditure programs with tax increases tend to break down.

What then is the viewpoint of modern fiscal theory? Is there any consensus among economists as to the relative merits of these somewhat conflicting viewpoints? Before attempting to answer this question let us examine briefly certain aspects of the economic context within which any fiscal or stabilization policy must operate.

First and perhaps most important, it is now recognized that fiscal policy must operate in the context of an economy subject to continuous and often rapid growth. When our economy is working well each year will see new records established for production, income, and employment. Indeed, to stabilize the economy at some particular income level would be to stabilize the economy in a position subject to a growing volume of unemployment and under-utilization of capacity.

Moreover, we often fail to appreciate the speed at which our economy grows. Consider, for example, the changes that have occurred in the Canadian economy over the past six and a quarter years—from the peak of the 1955-57 expansion up to the end of 1963. In this period, non-farm employment increased by 23 per cent or in absolute terms by 1,140,000. Gross national product grew by \$7.7 billion or 24 per cent for data in constant 1957 prices; the increase in current prices was \$12.1 billion or 37.5 per cent. In this same period expenditures at all levels of government increased by \$4.9 billion, a rise of over 40 per cent. Government revenues rose by almost as much, rising \$4.6 billion or by about 38 per cent. And all this occurred during a period of slower growth in the Canadian economy. These data serve to underline the importance of appreciating the growth context within which government fiscal policy must operate.

As applied to employment policy, recognition of the growth factor involves an appreciation that total employment must increase substantially just to keep unemployment from getting worse. For full employment is a moving target. In recent years the Canadian labour force has been growing on the average about 120,000 a year. Thus, an increase in gross national product amounting to 3 or 4 per cent has been necessary just to take care of this normal growth in the labour force and to reabsorb workers released by technical progress. If unemployment is to be reduced, an even larger increase than this must be obtained.

One method of allowing for the economy's growth potential in the formulation of government stabilization policy is to estimate the potential full employment

level of gross national product.¹³ Thus, if the objective of employment policy is an unemployment rate of 4 per cent, an estimate is made of the gross national product that would be required to reduce unemployment to this level. The difference between the actual and the full employment level of gross national product—the G.N.P. gap, as it is often called—represents the loss of output the economy suffers because of its failure to attain this objective. For a 4 per cent unemployment rate, the G.N.P. gap for the United States was estimated to be about \$30 billion as at the end of 1963. For Canada the Economic Council has recently estimated the G.N.P. gap for 1963 at \$2.5 billion.¹⁴ This is the gain in output that would have been obtained if output had been increased enough to reduce unemployment from its realized level of 5.5 per cent to a target level of 3.0 per cent of the labour force. That such a small reduction in unemployment can achieve such a large increase in output is due to the fact that a decline in unemployment is normally accompanied by additional entrants to the labour force, by a lengthening of the work-week, and by a rise in productivity as capital and other fixed factors are more fully utilized. Recent studies for the United States suggest that each 1 per cent decline in the unemployment rate (such as from 5.5 per cent to 4.5 per cent) is accompanied by a 3 per cent growth in gross national product.¹⁵ The G.N.P. gap has value in dramatizing and stating more precisely the goal of policy and the loss involved in failing to realize it.

Modern fiscal theory also needs to be planned with reference to the underlying nature of the growth and fluctuations to which a capitalist enterprise economy is subject. Comparatively recent developments in economic theory have made it clear that our economy only operates well as long as it maintains a satisfactory rate of growth. For continuous growth is needed in order to induce an adequate volume of capital investment. And a high level of capital spending is essential if the economy is to maintain a high level of employment. Capital investment adds to the economy's productive capacity. If output grows rapidly enough this productive capacity will be fully utilized and business firms will have an incentive to make further investments. But when growth in output lags, excess productive capacity appears and this deters business from making further investments. Fortunately, many business investments are made to replace old or obsolete equipment or to exploit new innovations, or are planned with a view to the long-range growth of the market. For this reason, when excess capacity appears, although business capital spending may decline it does not cease entirely. Nevertheless, unless a satisfactory growth can be generated, business capital spending will not be high enough to generate the high and growing output level needed to keep unemployment down to desired levels. And if growth ceases for any extended period investment spending will fall sharply.

¹³This approach has been pioneered by the United States Council of Economic Advisers. See *Economic Report of the President*, 1962, 1963 and 1964 (Washington: United States Government Printing Office).

¹⁴See B. J. Drabble, *Potential Output, 1946 to 1970* (Ottawa: Queen's Printer, 1964).

¹⁵This relation applies over a range of from 4 to 7 per cent unemployment. It may not apply for unemployment rates outside this range. See Arthur M. Okun, "Potential GNP: Its Measurement and Significance", *Proceedings, Business and Economic Statistics Section, American Statistical Association*, 1962, 98-104.

In addition to the growth problem, our economy faces a problem of cyclical fluctuations. At one time economists tended to view cyclical fluctuations as a sort of inevitable characteristic of our economy: although they might be alleviated they could not be eliminated entirely. This is probably still the view of the majority of economists in respect to the minor recessions to which the North American economy has been subject throughout the post-war period. But for more severe types of cyclical fluctuation, most economists would now take the view that government economic policy should be able to either prevent them from appearing or greatly reduce their scope and amplitude. And even the minor recessions can be made less frequent and reduced in size.¹⁶ The objective of economic stabilization policy should be one of continuous growth in output at minimum levels of unemployment, keeping departures from this path as infrequent and as small as possible. In other words, the goal is to get the economy's actual output moving up the path of potential gross national product at high employment, with the G.N.P. gap eliminated entirely or kept at a minimum level.

If this goal is to be attained, fiscal policy will need to give special attention to the composition and rate of growth of gross national product. In the past, fluctuations in business capital spending have been a prime cause of fluctuations in income and employment. To avoid these in the future will require that productive capacity and actual output be kept in reasonable balance. For if excess productive capacity develops it will weaken the incentive for business capital spending; if shortages of capacity become substantial a boom in capital spending may develop. This desire to maintain a balance between productive capacity and actual output is reflected in recent policy measures of the United States government. Thus, on the one hand, it has introduced measures—such as the investment credit, the reduction in corporate income taxes, and the revised depreciation guidelines—that are designed to induce a higher level of capital spending. On the other hand, it has adopted a major cut in personal income taxes designed to raise the level of consumer spending and thus reduce the gap between actual and productive capacity.

It is also assumed here that fiscal policy will be supported by a complementary monetary policy. Thus, when the government cuts taxes and increases its expenditures in order to offset a decline in private spending it is assumed that the borrowing required to finance the increased deficit will not cause interest rates to rise sharply. A convenient assumption would be that the central bank increases the money supply in line with its estimate of the amount required at full employment.

Thus far, too, this discussion of fiscal policy has proceeded as if the country had no foreign trade. Where, as in Canada, foreign trade is important, these conclusions on the effects of fiscal policy need some modification. Under a fixed exchange rate fiscal policy will be effective but as compared with a closed economy the beneficial effect of any fiscal action will be weaker because of a leakage by way of imports. To some degree fiscal action may have to be accompanied by

¹⁶For a similar view see the latest report of the Council of Economic Advisers which, in commenting on recessions, says: "There have been many occasions in the past when timely Federal policy actions could have maintained the balance between demand and capacity and thereby changed our economic history. It is vital that such opportunities be seized in future." *Economic Report of the President*, 1964, 39.

moderately restrictive monetary policy in order to attract some additional capital inflows and thus prevent a decline in exchange reserves. When a flexible exchange rate is in effect and capital funds move readily in and out of the country fiscal effects may be much weaker unless they are supported by monetary policy. However, where supported by monetary policy fiscal policy will be more effective than it is under a fixed exchange rate.¹⁷

Having recognized that modern fiscal policy must be supported by monetary policy, must operate in the context of a rapidly growing economy and must take careful account of the relation between output and productive capacity, how does it go about achieving its goals? Is there any consensus among economists on this matter? An answer to this question can perhaps best be provided by considering the last three reports of the United States Council of Economic Advisers. When the late President Kennedy took office the Council was asked to help implement his promise that he would greatly improve the performance of the American economy. Thus, the Council's subsequent reports reflect the views of economists of the highest professional competence as to how to achieve this goal.

Examination of these reports makes it clear that while their authors regard the built-in-stabilization qualities of the federal budget as of basic importance in acting as a cushion against sharp changes in demand toward either inflation or recession, they believe this to be little more than a first step toward a satisfactory fiscal policy. The sharp increase in the federal deficit that develops whenever the United States economy enters a recession has undoubtedly helped keep the post-war declines in output from becoming more severe. But the sharp increase in federal revenues that occurs when output begins to rise can also become a major obstacle to recovery, an obstacle that is strengthened by the large potential revenue growth inherent in the United States federal tax structure. Thus, there is need for a strong discretionary policy to supplement the effects of built-in stability.

In the United States, this discretionary policy operates within what can best be described as a national budgeting approach. Under the terms of the Employment Act of 1946 the United States President is required to report to Congress each year, evaluating recent economic developments, giving a forecast of the major components of gross national product for the coming year, and outlining a program to help the economy achieve its potential. It is in terms of this projected national budget that specific fiscal policy proposals can be assessed and evaluated. In presenting and analysing the impact of the government's own operations on the economy, increasing attention has been given to the national accounts budget. The latter is wider in scope than the regular administrative budget since it includes various non-budgetary funds such as unemployment insurance. Moreover, because it is on an accrual rather than a cash basis and because its scope is limited to expenditures that directly affect income, it provides a much better basis for assessing the impact of government revenues and expenditures upon the economy than either the cash or the administrative budget. Further, because substantial variations

¹⁷See two articles by R. A. Mundell, "Employment Policy under Flexible Exchange Rates", *Canadian Journal of Economics and Political Science*, November 1961, 509-17, and "Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates", *ibid.*, November 1963, 475-85.

in economic activity can occur within a twelve-month period, there is need to consider the impact of the government budget on a quarterly basis (after seasonal adjustment).

Within the context of a national budget the central role of government fiscal policy is to balance the economy, to stimulate or restrain private spending for consumption and investment so that the nation's output will stay close to its potential. In achieving this goal fiscal policy will be assisted by monetary, debt-management, and other policy weapons. It is implicit in this approach that the deficits or surpluses that appear in the government's budget are not in themselves of central importance. The essential matter is that the budget should exert the desired effect on the economy.

When we examine the last three reports of the Council of Economic Advisers we find a strong emphasis on measures to increase the total level of demand in the United States economy and thus reduce the high level of unemployment that has prevailed in recent years. In the first of these reports the major recommendation was for measures designed to stimulate a higher level of capital spending, in particular for an investment tax credit and for new depreciation guidelines. However, when, in the face of a persistent margin of unused capital facilities, capital investment did not respond strongly to these incentives, a major tax cut was recommended in order to raise the level of consumer spending and thus get the economy operating closer to capacity. If this objective is achieved it is hoped that this will stimulate an increase in capital spending by business firms and thus help sustain a continuing growth in output, at the same time reducing unemployment toward the 4 per cent target level.

Thus far, this discussion of fiscal policy has concentrated mainly on the goal of securing and maintaining a low level of unemployment. Let us now turn to the other two principal goals of economic policy, reasonable stability of prices and an adequate rate of economic growth.

Policy measures designed to raise the economy's over-all level of demand and thus reduce the level of unemployment almost inevitably encounter, at some stage, the problem of rising prices. For as the unemployment level falls, more and more industries and firms will begin to face a scarcity of labour and competition for the limited supply of labour will tend to bid up wage rates. This will often lead to higher prices. In addition, with lower levels of unemployment trade unions will feel in a stronger bargaining position and will often make larger and more aggressive wage demands. Business firms, facing firmer and less competitive markets, will pass on these higher wage rates and increases in material and other costs by raising their prices. When prices begin to rise what alternatives are open to the government policy-maker? One approach would be to desist from any attempt to reduce the unemployment level further. A better alternative is to attempt to devise measures that will raise the output and employment level where price increases of significant size begin to appear. But what are some of the measures that might help achieve this goal?

Any measures that will reduce the amount of seasonal, frictional, and structural unemployment will enable the economy to operate at a higher level of output while still maintaining reasonable price stability. Thus, a direct attack on these

types of unemployment is required. For seasonal unemployment the major Canadian effort to date has been the winter works program under which the federal government pays a large share of the labour costs of municipal public works projects performed during the winter months. During the past year this was supplemented by the special \$500 bonus on new homes constructed between December and April. The latter measure appears to have obtained very dramatic results. Further measures for which the social benefits exceed the costs could undoubtedly be devised in this field. Seasonal unemployment often increases in the winter months because costs increase at that time. Government subsidization to offset these higher costs should help sustain employment at a more uniform level in these industries. While complete elimination of seasonal unemployment may not be feasible there is reason to believe that a determined attack on this problem would have a substantial measure of success.

Structural unemployment often arises because workers lack the skills needed to fill existing job vacancies or because they are located in areas where unemployment is exceptionally high and may not be well informed about job opportunities elsewhere. All of these difficulties would yield to concerted government policy measures. An efficient and well-staffed government employment service should be able to provide information on job opportunities to unemployed workers in all parts of Canada. Recent steps have been taken to make a major improvement in facilities for vocational training in Canada. And programs are now getting under way that will make it easier for unemployed workers to enroll in such courses. Workers in receipt of unemployment insurance should be free to take such courses and, once enrolled in a specific course, they should not be required to accept any new job offers as a condition of maintaining their eligibility for benefit payments until the course has been completed. Moreover, provision might well be made for free tuition to workers where the need for retraining is evident. Similar provisions might well be made for regular academic training.

For workers in depressed areas special provisions should be made to pay part or all of the travel costs involved in looking for work elsewhere and to assist the worker in moving his family if he is successful in finding a job elsewhere. Free transportation warrants at regular intervals to unemployed workers might provide part of the answer. Where workers in depressed areas are reluctant to move because they have made an investment in housing, the government might well set up a special institution to help them dispose of their property. The government might simply have to close down some of the houses purchased in this way and absorb the loss. But others it might be able to dispose of at modest prices to retired couples who might be glad to live in such areas despite the lack of employment opportunities. In the long run, even though some losses were incurred this might be a less expensive solution than supporting unemployed workers on relief or welfare for indefinite periods.

Another approach to the problem of price stability consists of the creation of a collective bargaining atmosphere which is conducive to non-inflationary wage settlements. In recent years a number of countries have adopted what is sometimes called an "income policy" in order to keep the wage increases negotiated in union contracts from becoming a source of higher prices. In the United States, for

example, the Council of Economic Advisers has suggested guidelines for non-inflationary wage increases.¹⁸ Their proposal is that wage increases should be limited to the trend increase in productivity in the economy as a whole over the previous five years. Because the increase in output per man-hour fluctuates somewhat erratically from year to year, the average increase over the past five years is used as a guide rather than the increase in the latest year. Moreover, this guide is intended to apply in all industries, in those that register larger than average gains in productivity as well as those where the gains are below average. If this pattern prevails and wage increases in all industries follow the guideline provided by the economy's average growth in productivity, price reductions should take place in the former group of industries, whose productivity gains were above average, and price increases would be necessary in the latter group. Departures from this pattern are recognized as necessary to correct initial inequities in the wage structure and in rapidly expanding industries that need to pay higher wages to attract labour. There has been no attempt in Canada, thus far, to provide a similar set of guidelines, but the suggestion has undoubted merit.

A variety of other measures can also make a contribution to price stability. Tariff reductions can be used to increase the degree of price competition in industries where there is evidence that large firms are using their market power to maintain or advance prices in the face of large productivity gains. An aggressive anti-monopoly program which focuses attention on practices that reduce price competition can have a similar effect. Governments should be careful in their own policies to avoid measures that prevent prices from falling in response to normal market developments. Thus, policy measures designed to maintain the level of farm income will be less inflationary or more anti-inflationary if they do not interfere with the fall in farm prices that would occur in free markets. There may be merit, too, in trying to offset the effects of large and sudden price increases of individual commodities (sugar would be a recent example) where the price rise is expected to be temporary. A temporary suspension of excises on commodities in widespread use might serve to prevent a temporary rise in the consumer price index and hence avoid the danger of having this temporary rise passed on in higher wage levels as labour seeks wage increase in line with increases in the cost-of-living index.

In brief, it is clear that there is need for a continuous and systematic concern in government fiscal policy for the maintenance of stable prices. Such an approach is essential if unemployment is to be reduced to much lower levels without the risk of some form of creeping inflation.

The third major goal of economic policy, an adequate rate of economic growth, has only recently begun to receive a significant amount of attention from economic theorists and government policy-makers. As a result our knowledge of the conditions that favour economic growth is still sketchy and incomplete. However, recent studies in the United States have made some progress toward isolating some of the major factors involved. These studies indicate that only about one-half of the growth in the United States gross national product over the past half-century has

¹⁸See *Economic Report of the President*, 1964, Chapter 4.

been due to the growth in the stock of capital and the increase in the labour force. In accounting for the remaining half two of the most significant factors have been the increase in the skills and educational qualifications of the labour force and the greatly increased supply of knowledge and technical information of all types. Let us consider the role that economic policy can play in each of these areas.

Over the past few decades Canada has made important strides in providing her young people with a better and more extended education. But there is still a great deal of room for further improvement. The number of our young people who complete high school and university is still far below the levels that prevail in the United States. If we want to have a skilled, well-educated, and productive labour force in an age of rapid technological change we must encourage a larger proportion of our young people to complete high school and go on to university.

Moreover, given the fact that the pace of technical change is accelerating and in view of the sheer volume of new knowledge that is accruing throughout the world, there will be a particular need to make sure that teachers, the curriculum, and the textbooks in use are kept abreast of the latest developments in knowledge. A regular sabbatical system for secondary school teachers which would allow them to go away for a year at regular intervals to renovate and bring up to date their knowledge and acquire information on the latest teaching methods might prove a useful policy. Unless this is done on a regular and systematic basis there is a serious danger that many older teachers will find their knowledge becoming partially obsolete. It is important too that good and up-to-date textbooks be provided. Perhaps the government should take some initiative in sponsoring or encouraging eminent scholars to write suitable high school textbooks in their field.

In the larger area of research and technical knowledge there is also a great deal that can be done. Although research expenditures in Canada have been increasing, we still lag far behind the United States in this field. At the present time research and development expenditures in the United States amount to about 3 per cent of gross national product compared to less than 1 per cent in Canada. While in very considerable degree we are beneficiaries of the research done in the United States and other countries we cannot afford to rely too extensively on the research effort of other countries. There are a number of reasons that make such a policy unwise. First, it is only countries that have a significant number of scientists and research workers of their own who are likely to appreciate and utilize the scientific strides being made in other countries. Further, most developments elsewhere need to be adapted before they can be utilized in Canada. Often, too, there are problems of special interest to Canada that may not receive adequate research attention elsewhere. Finally and perhaps most important, there is evidence that research in many fields yields a high return. Unless Canada is in the forefront in at least some research areas she will not be in a position to develop her share of new export products and thus be able to maintain an active and expanding balance of trade.

All of these considerations suggest that there is need for Canada to expand the effort she now devotes to research activities. As matters stand now, Canada's expenditures in this field lag well behind a number of European countries as well

as the United States.¹⁹ Even Japan now devotes a larger share of her gross national product to research than Canada does. Moreover, Japan is committed to expanding her research expenditures from 1 per cent to 2 per cent of her national product by 1970.

There is a particular need for a government research policy designed to co-ordinate and rationalize the research expenditures that take place within the country. At the present time the level of research effort varies widely from industry to industry. The reasons for this are many. In some industries the majority of firms are too small to make research expenditures a profitable venture. In others, the lack of research may simply reflect the fact that the industry has never been research-minded. Thus, there is a special need for a government research policy designed to increase the amount of research in areas that are now neglected. The government has a particular obligation for sponsoring or conducting research in industries for which it is a large buyer of the final product. Thus, provincial governments have a particular obligation to support research efforts in the field of education. As an important buyer of the products of the construction industry the government should actively support research in this industry. It has been suggested, too, that in areas such as this the government could use its contracts as an inducement to the introduction of new techniques.²⁰

The government can also play an important role in improving the efficiency of business enterprises throughout the economy. Many smaller firms conduct little or no research or development themselves and often do not have the trained technical people needed to take advantage of the research of others. Thus, there is ample room for a government technical advisory service throughout the entire range of non-agricultural industries comparable to the extension service that has long been provided to agriculture. One proposal that merits study is an industry-university engineering extension service. "This program will include identification of technical problems, technical advice, in-plant demonstrations of new technologies and short courses and conferences. The objective is to strengthen the scientific and technical competence of management and supervisory personnel, to develop the facilities of universities to meet local and regional technological needs, and to reduce the gap between the technologies of leading and lagging industries and firms."²¹ In a period when world markets are becoming increasingly competitive Canada may have particular need for such a technical advisory service for her manufacturing industries.

A third major source of economic growth is the level of capital investment. A high level of capital investment is particularly important for economic growth because many of the latest technological developments are incorporated in new capital equipment. A country that maintains a high level of capital investment will have a relatively new, up-to-date, productive stock of capital. Governments can maintain conditions favourable to capital investment by pursuing a fiscal policy that keeps the economy operating at a high level, by maintaining regulations for

¹⁹See *Science, Economic Growth and Government Economy Policy*, Organization for Economic Co-operation and Development (Paris, 1963), 22-6.

²⁰See *Science, Economic Growth and Government Policy*, 58.

²¹See *Economic Report of the President*, 1963, 64.

depreciation that favour the replacement of old or obsolete equipment, and by helping to create a capital market where funds are available at low interest rates and in the forms needed by business firms. It is important too that the stock of public capital should be modern and efficient. Good schools, hospitals, and transportation facilities, adequate water supplies and sewage facilities, modern and efficient libraries and universities, good parks and recreation facilities, all make a contribution to an efficient and productive community.

In Canada, another important consideration is the degree to which our capital facilities are financed out of our own savings rather than out of funds borrowed from other countries. It is commonly assumed that it is appropriate for a country at Canada's stage of development to rely extensively on the supply of funds from other countries. Yet it can be seriously questioned whether this is a wise policy. As the data presented in Table 1:1 indicate, in recent years Canada has relied more heavily on foreign capital than any other major industrial country. Nor can this dependence on foreign capital be easily justified on the basis of the size of the capital investment program Canada has undertaken. For a number of countries have managed to finance all of their own capital requirements and still maintain an active current account balance-of-payments position, even though their capital spending program was as large as or larger than Canada's. Western Germany, for example, maintained over the period 1956 to 1961 an excess of exports over imports equal to 3.1 per cent of her gross national product despite a capital spending program which amounted to 29 per cent of her gross national product.

TABLE 1:1 Dependence on foreign capital, in relation to the level of gross fixed capital investment, Canada, the United States and major Western European countries, 1956-62

	Net foreign investment		Gross domestic fixed asset formation*	
	1962	1956-61	1962	1956-61
Percentage of gross national product				
Austria.....	.3%	.6%	22.6%	22.0%
Belgium.....	.3	1.0	19.8	17.8
Canada.....	-2.1	-3.5	21.4	24.2
France.....	.5	.2	19.6	18.9
Italy.....	—	.4	23.7	21.5
Netherlands.....	1.7	1.8	24.4	24.0
Norway.....	-4.4	-2.5	30.0	28.7
Sweden.....	—	-.3	22.2	21.2
Switzerland.....	-1.8	.6**	27.6	25.8**
United Kingdom.....	.8	.8	16.3	15.7
United States.....	.8	.7	16.1	16.8
West Germany.....	1.0	3.1	25.4	29.0

*Includes government capital spending.

**1960-62 only.

Source: *General Statistics: National Accounts, Supplement*, Organization for Economic Co-operation and Development, March 1964.

The amounts involved are substantial. Suppose Canada had financed a much larger share of her own capital spending program over the past decade and thereby had avoided, say, about \$5 billion of the recent increase in her net external in-

debtedness. If we assume that this investment yields an annual return after tax of 6 per cent, the result today would be an additional \$300 million of income accruing to Canadians annually instead of to foreign investors. And our current account deficit in our balance of payments would be improved by at least part of this amount. Moreover, it would have been perfectly possible for Canada to have achieved such a result. All that would have been needed would have been a shift of this amount in the budgetary position of all governments from deficit to surplus and the required adjustment in our balance-of-payments position. To the degree that this change in budgetary position caused some decline in the rate of private saving the net increase in budgetary surplus would have needed to be somewhat larger than \$5 billion. Such an increase in the national savings rate would have required at least a temporary reduction in consumption standards. Whether or not Canadians would have wished to incur such a cost is essentially a political question. But there can be little doubt that this was an attainable objective.

Policies designed to encourage economic growth, of course, have their costs and should be implemented only if the anticipated benefits exceed the expected costs. Since economic research has, as yet, provided very few data on the return that can be expected from such policies economists cannot give very precise advice with respect to how far these various policies should be pursued.

CHAPTER 2

The Theory of Fiscal Policy from the Point of View of the Province

IN their discussions of fiscal policy economists have usually had the central government of the country in mind. While they have often recognized that in a federal country the provinces or states may have important functions within their control, they have not expected them to follow a conscious fiscal policy aimed at maintaining low levels of unemployment, stable prices, and a reasonable rate of economic growth. Indeed, local governments have frequently been accused of following a perverse fiscal policy, thus offsetting some of the benefits that might otherwise have been obtained from the fiscal policy pursued by the federal government.¹ Yet it is not entirely clear why state and provincial governments should not pursue a conscious fiscal policy. Let us consider this question in some detail. In what respects is the position of a province different from that of the federal government? And do these differences rule out or make impossible a deliberate fiscal policy at the provincial level? Further, assuming provincial policy is feasible, is it also desirable?

It is clear, to begin with, that the size of the income or population that comes under provincial control does not rule out the possibility of a fiscal policy. For although Canada as a whole is much larger than any individual province, the large provinces compare favourably in size with many independent countries. Thus, as the data in Table 2:1 make clear, whether the comparison is made in terms of national income or population the province of Ontario is as large as or larger than half a dozen important industrial countries. To a lesser extent the same is true of Quebec. Even British Columbia has a national income which is larger than that of Ireland and almost as large as that of New Zealand. No one would suggest that Austria or Denmark or Sweden should not pursue an independent fiscal policy. On grounds of size, then, one would suppose that Ontario, Quebec, and British Columbia ought equally to pursue such a policy. To a lesser extent, the same would be true of the other Canadian provinces.

Moreover, the volume of revenues and expenditures that now come under provincial and municipal control also argue for the importance of a positive provincial fiscal policy. As of 1963 the combined expenditures of provincial and municipal governments exceeded those of the federal government by more than \$1 billion (See Table 2:2). Similarly, the revenues at the disposal of provincial and muni-

¹See, for example, A. H. Hansen and H. S. Perloff, *State and Local Finance in the National Economy* (New York: W. W. Norton and Co., 1944), Chapter 4. However, a number of writers have recently begun to question the fiscal perversity thesis, although it is still generally accepted. See A. M. Sharp, "The Counter-Cyclical Fiscal Role of State Governments during the Thirties", *National Tax Journal*, June 1958, 138-45; J. A. Maxwell, "Countercyclical Role of State and Local Governments", *National Tax Journal*, December 1958, 371-6; and M. S. Baratz and H. T. Fair, "Is Municipal Finance Fiscally Perverse?", *National Tax Journal*, September 1959, 276-84.

TABLE 2:1 Population and national income, 1962: Ontario, Quebec, and British Columbia compared to a number of smaller industrial or high income countries

Country or province	Population (mid-year) thousands	National Income billions of U.S. dollars
Australia.....	10,705	13.9
Austria.....	7,128	5.5
Belgium.....	9,221	10.3
Denmark.....	4,651	5.9
Ireland.....	2,824	1.8
Netherlands.....	11,797	10.8
Norway.....	3,639	4.0
New Zealand.....	2,485	3.4
South Africa.....	16,240	7.0
Sweden.....	7,562	11.6*
Switzerland.....	5,660	9.0
Ontario.....	6,342	11.4**
Quebec.....	5,366	7.0**
British Columbia.....	1,659	2.9**

*Sweden does not publish an estimate of national income. The above estimate was obtained by deducting 10 per cent from gross national product at factor cost.

**Data are for personal income converted to U.S. dollars at an exchange rate of \$1 U.S. equal to \$1.08 Canadian. All other conversions were made at official exchange rates.

Source: United Nations, *Monthly Bulletin of Statistics*, March 1964; International Monetary Fund, *International Financial Statistics*, March 1964; and Organization for Economic Co-operation and Development, *General Statistics*, March 1964, *National Accounts Supplement*.

cial governments, after federal transfers, exceeded those at the disposal of the federal government by roughly the same amount. Thus, within any one province, the volume of revenue and expenditure coming under the control of the province and its municipalities will usually be slightly larger than those under federal control. Moreover, in the important area of government capital expenditures in recent years, provincial and municipal expenditures have exceeded those of the federal government by a ratio of almost 3 to 1.

TABLE 2:2 Federal and provincial-municipal expenditures and revenues, 1963

	Federal	Provincial- municipal
	millions of dollars	
EXPENDITURES		
Goods and services.....	2,927	5,149
Transfer payments.....	3,065	2,178
Subsidies.....	275	38
Total (excluding inter-governmental transfers).....	6,267	7,365
REVENUES		
Personal income tax.....	2,193	717
Corporate income*.....	1,481	457
Indirect taxes.....	2,450	3,428
Investment income.....	497	836
Insurance and pension funds.....	533	305
Federal transfers.....	-1,165	1,165
Total revenues.....	5,989	6,908

*Includes withholding tax.

Source: *National Accounts: Income and Expenditure*, Fourth Quarter and Preliminary Annual, 1963.

Perhaps the major difference that most economists see between the position of the federal government and that of a province is in respect to the monetary power of the federal government. The government in Ottawa can use its control over the Bank of Canada to support the price of its bonds when it wishes to pursue a policy of deficit finance in a period of declining income. The provincial government does not have this alternative available. However, it would be easy to exaggerate the importance of this difference. If, as is true at present, Canada has a fixed exchange rate, monetary policy will have to be closely geared to the requirements of the balance of payments. This means that an increase in the size of the federal deficit, due say to a tax cut or an increase in government expenditure, might require a tighter monetary policy. For rising incomes within Canada would lead to higher imports and might thus cause Canada's balance-of-payments position to worsen. On the other hand, if the Bank of Canada were pursuing a policy of active monetary ease to offset the effects of a recession, the provincial government would benefit from this equally with the federal government. Only in circumstances where there was serious unemployment in one part of Canada at a time when the rest of the country was prosperous is there any likelihood that the monetary policy suited to the needs of the federal government would differ from that desired by a province. Moreover, it will be argued below that the debt limits which a province faces do not differ essentially from those faced by the federal government. Thus, the absence of control over monetary policy cannot be taken seriously as an argument against the possibility of an active fiscal policy at the provincial governmental level. The province will not be free, as the federal government well may be, to choose the particular mix of monetary and fiscal policy it desires. It will simply have to adjust its fiscal policy to the monetary policy determined at the federal level. But again, this does not argue against the ability of a province to pursue an independent fiscal policy.

A province also differs from the federal government in not having any control over the exchange rate. But this, too, is not a bar against an active and effective provincial fiscal policy. When Canada had a flexible exchange rate, it is true, the federal government was able through its monetary policy to influence the level of the exchange rate and thus exercise an important policy influence on the economy. But even in these circumstances, it seems likely that federal monetary and exchange-rate policy, if correctly conceived, would normally be complementary to both federal and provincial fiscal policy. Moreover, now that Canada has returned to a fixed exchange rate, a position most other countries find themselves in and the normal requirement of the International Monetary Fund, any changes in the exchange rate will occur very infrequently and only when it can be justified on the grounds that Canada's price and cost level relative to those of other countries is out of line at the existing exchange rate. Furthermore, there is reason to believe that when a country is on a fixed exchange rate fiscal policy is much more effective than monetary policy.² And to the degree that fiscal policy involves the maintenance of a reasonable degree of price stability there is a greater need for fiscal

²See R. A. Mundell, "Capital Mobility and Stabilization Policy Under Fixed and Flexible Exchange Rates", *Canadian Journal of Economics and Political Science*, November 1963, 475-85.

policy under a fixed exchange rate. For in these circumstances the maintenance of a competitive price and cost position may be the key to successful competition in world markets.

A province also differs from the federal government in respect to immigration policy. But again the differences are those of degree rather than of kind. Depending on the buoyancy of the labour market and the level of unemployment the federal government can either encourage or discourage immigration. In contrast, a province cannot directly restrict the movement of either Canadians from other parts of Canada or of new Canadians across its borders. Moreover, if a province succeeds, through the use of vigorous fiscal measures, in reducing unemployment within its borders to comparatively low levels, there will be an increased inflow of workers from other parts of Canada. To some degree, this is also true of Canada as a whole. Immigration increases in periods when the demand for labour is growing rapidly and falls off in periods of slack and high levels of unemployment. Thus, inability to control the volume of immigration does not prevent a province from having an active fiscal policy. Indeed, members of the European Economic Community are in the position of having to pursue an active fiscal policy under circumstances that allow a free movement of labour throughout the community.

Another major difference between Canada and an individual province is the much larger leakages that will occur in the case of provincial fiscal policy measures. In other words, while an increase in provincial spending or a reduction in provincial taxes will lead to some increase in the demand for goods and services produced within the province, a substantial proportion of the increased expenditure may be for goods produced in other provinces or outside of Canada entirely. In the case of national policy measures, the leakage through imports is confined to the expenditures on the goods and services of other countries. However, to the degree that fiscal policy measures are being carried out by a number of provinces at the same time offsetting effects will occur. Moreover, this is again a difference in degree rather than kind. Many small countries may have import leakages which are as large as those of Ontario or Quebec. In some degree, a province is in a position to minimize these leakages in respect to the first round of additional expenditures, for a wide range of public works expenditures comes under its jurisdiction and these often have a large local employment content. However, it must be recognized that this does seriously limit the effectiveness of provincial fiscal policy unless all or a number of provinces act in parallel fashion. The limitation will be especially serious for the smaller provinces.

Perhaps the key factor in determining whether a province can pursue an independent fiscal policy is the nature of the province's borrowing capacity and the extent to which it can increase its debt. It is usually argued that the provinces and municipalities are in a very much inferior position in this respect to that of the federal or central government.³ And yet it is not entirely clear why this should be so. In part, it reflects the fact that the central government can always use its control over the central bank to increase the money supply and thereby support the value of its securities. Such an opportunity is not open to

³See Hansen and Perloff, *State and Local Finance*, Chapter 10.

junior levels of government. But it would be a mistake to assess the ultimate borrowing capacity of different levels of government on the basis of what happened during the Great Depression, even though that experience may still condition the lending practices of investment institutions. For it is virtually certain that in any future period of cyclical decline, the central bank will pursue a policy of monetary ease and this will benefit junior levels of government as well as the central government.

Ultimately, borrowing capacity depends on the willingness and ability of the government to service the debt incurred and for this reason the reputation and taxable capacity of the government has a key bearing on its credit rating.⁴ It is clear that the federal government, with its access to all forms of taxation and its present control of a dominant share of the taxes which have the highest growth potential, the personal and corporate income tax, will have the largest borrowing capacity. Similarly, local governments, which are heavily dependent on the property tax or on grants from senior levels of government, are in the weakest position. Nevertheless, as data to be presented later will indicate, most of the provinces are at present in a comparatively strong credit position. Not only are their net debt charges much lower in relation to income than was true in earlier years but they now also have a very substantial guaranteed floor under the revenues they receive from the federal government.

There is also reason to believe that, for the larger provinces at least, under some circumstances a moderate increase in the size of their outstanding debt might improve rather than weaken their credit rating. To some degree the preferred status of federal government securities is due to the fact that they are available in larger quantities and in a wider range of maturities, and are more actively traded. For this reason, anyone who has funds to invest for a comparatively short period of time or who wants to protect himself against the risk of having to liquidate securities at short notice on unfavourable terms will prefer the security with the wider and more active market. If there were a larger volume of Ontario government securities available and a wider range of maturities, a more active market might develop here also. To some extent also, the better market for federal government securities is due to the fact that they are the only security bought and sold by the Bank of Canada. Because open market operations are conducted entirely in federal government securities, the Bank of Canada has a special interest in promoting an active market or, to use an expression favoured by the Federal Reserve Board in the United States, a market that has "depth, breadth and resiliency." The failure of the Bank of Canada to conduct its open market operations in a much wider range of securities is in large measure an arbitrary limitation

⁴It is difficult to know how much importance to attach to the element of reputation but in respect to the credit rating of the federal government it is clearly secondary. One experienced official of an old Canadian firm of bond dealers, when asked why the bonds of the Government of Ontario carried a higher interest rate than those of the federal government, suggested that it was just conceivable that this normal pattern could be reversed if the affairs of the federal government were managed very badly at a time when the affairs of the Ontario government were being managed very well. But short of this extreme, federal government securities would continue to carry a lower interest rate than Ontario Governments.

and one which, in my view, should be removed. However, some economists feel that such a change would create political difficulties for the Bank.

In evaluating the ability of the provinces to pursue an independent counter-cyclical policy much depends on the severity of the cyclical fluctuations which are anticipated. On the basis of the post-war years to date, there is reason to believe that the typical cycle will consist mainly of a reduction or cessation in the normal rate of growth and perhaps occasionally a small and short-lived decline in gross national product. In cycles of such moderate amplitude almost all of the Canadian provinces have ample power to pursue counter-cyclical fiscal policies. The only provinces that might have difficulty would be the four Atlantic provinces. These provinces already have a net interest burden which is more than twice as high relative to provincial income as that in any other province.

If a more severe cyclical contraction were to occur there would be more risk of provincial debt limits' being tested, particularly if the decline proved protracted. But if, as seems likely, the federal government pursues a vigorous fiscal and monetary policy in such a period it is very unlikely that such a test would arise.

To sum up, while in certain respects a province is not in as strong a position to pursue an independent fiscal policy as the federal government, the differences are mainly of degree rather than kind and even where the province lacks certain powers that reside in the federal sphere this will not prevent the use of fiscal policy by a province.

Having concluded that a provincial fiscal policy is possible, let us next consider the question of whether, in fact, there is any need for an active provincial fiscal policy. Several considerations support the desirability of an active fiscal policy on the part of the province.

First, there is the practical matter that control over many areas of expenditure has been given to the provinces under the terms of the British North America Act. If the federal government wishes to pursue fiscal policy measures in these areas it can do so only with the agreement of or in co-operation with the provinces. For example, while housing expenditure has been an active tool of fiscal policy at the federal level, strictly speaking, control over this area belongs to the provinces. Again price stability may require or make desirable policy measures affecting wage negotiations and this lies largely in the provincial sphere of jurisdiction. Still again, both the rate of economic growth and the avoidance of structural unemployment may require important educational measures. And this area too, except for vocational and agricultural education where there is joint jurisdiction, comes under provincial control.

Further, there may often be substantial regional variation in the need for government policy measures. Yet many federal measures tend to affect all parts of the country equally. In contrast, the provinces are in a better position to take measures that will affect employment in one particular part of the country. The federal government could scarcely cut taxes in one area and leave them unchanged elsewhere. Yet the area of capital expenditures under federal control may be too limited to make a regional fiscal policy effective.

A rather dramatic example of the need for regional variation in policy occurred in the period 1955-57. Over this two-year period capital expenditures for all Canada increased by 40 per cent, but on a regional basis the increase varied from 87 per cent in British Columbia to less than 8 per cent in the Atlantic provinces. The increase for this period was 34 per cent in Quebec, 45 per cent in Ontario, and 22 per cent on the Prairies. To some degree the economy can adjust to these regional variations by the movement of capital and labour. Nevertheless, it seems likely that regional variations in provincial fiscal policy measures would have helped to moderate the widely different degrees of spending pressure affecting different parts of the country.

Additional evidence in support of the desirability of regional variations in fiscal policy is provided by the data in Table 2:3. These data show that the year-to-year changes in capital expenditures affecting different regions in the country move somewhat erratically from year to year. A vigorous use of provincial fiscal policy measures would go some distance toward smoothing out these irregularities. Variations in capital expenditures, of course, are not the only cause of regional variations in the rate of growth from year to year. Exports, the amount of import competition, consumer and government spending, all have their impact on a particular region. But it seems clear that substantial regional variations in the rate of growth of expenditures do occur and this suggests that a provincial government can use fiscal policy to help smooth out these irregularities. In practice there might be difficulty in forecasting variations in expenditures with sufficient accuracy to allow countervailing changes in provincial revenues or expenditures. However, for capital expenditures an annual forecast is available early in the year and just prior to the time when most provinces bring down their budgets.

TABLE 2:3 Year-to-year changes in capital expenditures, Canada, by regions or provinces, 1955 to 1964

	Atlantic region	Quebec	Ontario	Prairies	British Columbia
	Percentage change				
1955-56.....	11.8%	22.4%	27.3%	28.8%	57.0%
1956-57.....	-3.5	9.9	13.7	-5.0	19.2
1957-58.....	7.3	1.2	-4.9	7.0	-28.5
1958-59.....	15.5	1.9	-6.6	6.9	2.2
1959-60.....	3.1	-4.2	-1.5	.4	-5.3
1960-61.....	3.0	0.1	-2.2	-2.8	.7
1961-62.....	14.4	7.0	9.3	1.2	2.9
1962-63.....	.6	5.9	4.9	12.0	9.7
1963-64.....	13.8	19.4	12.0	9.3	30.0

Source: *Private and Public Investment in Canada*, Department of Trade and Commerce.

What Should Be the Objectives of Provincial Fiscal Policy?

In respect to unemployment, and within limits, the objectives of provincial fiscal policy should be the same as those of the federal government, that is, a low level of unemployment. The level of unemployment selected as a goal might well

vary depending on the degree to which a particular province is affected by seasonal and structural unemployment and the success it achieves in reducing or minimizing this type of unemployment. Thus, in Ontario, where seasonal and structural unemployment has been moderate, the goal might well be 2.5 per cent of the labour force or lower. In contrast where, as is true of the Atlantic area, unemployment has never fallen below 4 per cent throughout the post-war period, a goal of from 4 to 5 per cent would be more appropriate.

But to what degree is unemployment a federal rather than a provincial responsibility? How much of the burden should be assumed by the province? Let us consider first unemployment that arises from a moderate cyclical recession. Depending on its cause, the recession may affect some areas much more severely than it does others (see Table 2:4). For example, in the recession of 1957-58 the increase in the number of unemployed was equal to 4.2 per cent of the labour force in the Atlantic area compared with an increase of 1.5 per cent on the Prairies. Two factors account for this difference in the regional severity of unemployment. First, the decline in demand may affect some areas more severely than others. For example, if exports decline, owing to a recession in the United States market, areas that are highly dependent on sales in that market, such as British Columbia, will suffer the largest increase in unemployment. Second, and perhaps even more important, areas that normally export labour to other parts of the country will be particularly affected. For given the pattern of the economy's development as a result of natural economic forces, the increase in employment in some areas may exceed the normal increase in the labour force, with the extra labour being drawn from other regions or from outside of Canada entirely. Other regions may find their growth too slow to take care of the natural growth in their labour force, with a resultant outflow of labour to other regions. Although no precise data are available it seems clear that during the first post-war decade the interregional movement of labour in Canada was not large because some two-thirds of the total growth in the Canadian labour force came from outside the country (see Table 2:5). However, over the next decade with natural increase expected to provide a much larger share of the total there may be need for much greater interregional flows of labour. When a cyclical recession occurs these interregional movements of labour are likely to slow down or cease entirely. As a result, unemployment will tend to rise most sharply in areas that have been experiencing an outflow of labour.

TABLE 2:4 Increase in unemployment, in three post-war recessions, by regions

	(Percentage of labour force)		
	1953-54	1957-58	1959-60
Atlantic.....	1.0%	4.2%	-.3%
Quebec.....	2.1	2.8	1.3
Ontario.....	1.7	2.0	.9
Prairies.....	.1	1.5	.9
British Columbia.....	1.2	3.1	2.1
CANADA.....	1.6	2.5	1.0

Source: *The Labour Force*, Dominion Bureau of Statistics, Ottawa.

TABLE 2:5 Growth in the Canadian labour force, by five-year periods, 1950-65

	1950-55	1955-60	1960-65*
		(thousands)	
INCREASE IN LABOUR FORCE....	447	790	685-815
Native-born.....	147	510	645
Net migration.....	300	280	40-170
Immigration.....	410	420	190-320
Emigration.....	-110	-140	-150

*Forecast.

Source: *Report of the Special Committee of the Senate on Manpower and Employment.*

From the standpoint of the economy as a whole it is clear that these two sources of regional variations in the unemployment pattern call for different treatment. If a high level of unemployment in a particular area arises as a result of a particularly sharp cyclical decline in the demand for that region's products, it is appropriate that steps should be taken to provide an offsetting increase in employment within the region pending the recovery of demand. On the other hand, where the higher level of unemployment is a result of an interruption of the normal flow of labour out of the area it may be appropriate to provide some of the jobs required to absorb this unemployment in the areas which normally experience an inflow of labour. From the provinces' viewpoint, this means that provinces that are normally surplus labour areas cannot be expected to attempt to provide jobs for all the increased unemployment that accumulates within their boundaries. On the other hand, provinces that normally attract an inflow of labour should not hesitate to provide additional jobs merely because some of them are being filled by labour attracted from other regions. As a practical guide to policy let each province adopt the following goal. Just as a suitable goal for federal policy is to keep the level of Canada's gross national product moving up the path of potential full employment gross national product, so also a similar goal can be adopted by each province. Let each province attempt to keep its provincial gross national product moving up the path of potential full employment provincial G.N.P.

But how do we decide on whether federal or provincial action is needed, and what is the relative magnitude of the role each should play? There appears to be no simple answer to this question. To the degree that the federal government succeeds through the use of monetary, fiscal, exchange-rate, and other policy measures in keeping unemployment at low or moderate levels without any substantial rise in prices there may be little need for provincial fiscal measures. Only to the extent that national measures or cyclical fluctuations have an unequal impact on different parts of the country would there be room for supplementary provincial measures. Even here provincial fiscal policy might well make a significant contribution. The federal government would feel freer to pursue an expansive fiscal policy if it felt confident that its possible inflationary effects in some areas of the country would be offset by counter-measures on the part of the provincial governments in these areas. Further, there may be circumstances when the most appropriate expansionary measures are those that fall under the control of the provincial government. Thus, highway expenditures may often be the form of social capital expenditure that can be expanded most quickly in periods of economic slack.

Similarly, on social and other grounds it may be considered desirable in such periods to increase expenditures on public low-rent housing and urban renewal. All of these expenditures come under provincial jurisdiction.

In respect to frictional, structural, and seasonal unemployment the provincial government's goal should be very similar to that of the federal government. A province should be particularly interested in reducing seasonal and frictional unemployment because this is essentially a local or intra-provincial problem. In respect to structural unemployment its responsibility will vary depending on whether the solution to the problem requires a movement within the area or a movement to other areas. It seems appropriate to expect the federal government to take more responsibility for facilitating interregional movements of labour. Where the solution to the problem involves additional education or training the province has a special responsibility, for education falls primarily within its jurisdiction.

Up to the present time provincial governments have not given much indication that they regard the achievement of reasonable price stability as, in part, their responsibility. And yet one aspect of price stability, the achievement of non-inflationary wage settlements in the collective bargaining process, is an area for which they bear a primary responsibility. Then too, the provinces' control over marketing arrangements for farm products and their control over public utility rates have some implications for price stability. Thus, it seems clear that price stability should be one of the provinces' fiscal policy goals.

In respect to the third major goal of economic policy, a reasonable rate of economic growth, it has recently become clear that many provinces now recognize and accept some major responsibility. Thus, in his budget address on February 7, 1963, the Honourable James N. Allan, Provincial Treasurer of Ontario, stated: "The government has long considered the promotion of economic growth and development to be one of its major responsibilities." Similar statements have been made by the officials of other provincial governments and almost all of them have been increasingly active in this field in recent years.

How Should a Province Go About Achieving Its Fiscal Policy Goals?

In respect to policy measures that affect the level of aggregate demand within the province—that is, policy measures directed toward cyclical or lack-of-demand unemployment, inflation arising from an excessive level of demand, or toward reducing Canada's dependence on foreign capital—provincial fiscal policy will be implemented by general budgetary measures. At the present time, provincial governments in Canada use a form of the capital budget in presenting their accounts. However, there is a good deal of variation among the different provinces in their definition of capital expenditures and in their treatment of different accounts.

The capital budget approach has received some support in economic literature, and for junior levels of government, provinces and municipalities, it is an approach that has a good deal of merit. If we assume an economy in which resources are fully employed, then an optimum allocation of resources would be most closely satisfied by adherence to the capital budget approach. Under this

approach each governmental unit would increase its capital expenditures up to the point where the *marginal social benefit* in terms of the current return to society from the capital expenditure was equal to the current rate of interest.⁵ The current section of the budget would include interest on the government debt and a depreciation allowance on government-owned capital, valued at current replacement cost. Strict adherence to the capital budget approach would call for the current budget to be balanced and for capital expenditures net of depreciation to be financed out of borrowed funds. In theory the concept of capital expenditures should be defined widely to include investment in people (education) and the acquisition of new knowledge (research). However, if these types of capital are to be included some estimate should also be made for depreciation and obsolescence in these areas. Such an estimate would necessarily be somewhat arbitrary and subject to a wide margin of error.

In practice, provincial governments have tended to apply the capital budgeting approach on a fairly conservative basis, maintaining a substantial surplus in their current account budget so that only part of their net capital expenditures is financed by borrowing. Given the existing pattern it would be easy to adapt present budgetary procedures to the requirements of a counter-cyclical policy. Thus, in periods of economic slack provincial governments could increase the share of their current capital expenditures financed out of borrowed funds. In more expansionary periods they could finance a larger share of capital expenditures out of current revenue or, if it proved desirable, run an over-all surplus. To achieve this result each provincial government could vary tax rates or the size of its capital expenditure program or both. The decision whether tax rates or expenditures should be varied would have to be made in the light of the kind and location of unemployed resources and the probable effectiveness of either change in reducing the level of unemployment.

If any or all of the provinces were to adopt a positive counter-cyclical policy of this kind it might or might not involve them in a larger increase in debt than would be incurred under present policies. One approach would be to attempt to balance the government's current account budget, on the average, over the cycle. If this approach were followed, all capital expenditures net of depreciation on existing capital would be financed out of borrowing on the average, but the current account portion of the budget might run at a deficit in some years and at a surplus in others. A less expansive, and perhaps more politically acceptable, policy would be to maintain a balanced current account position during periods of economic slack and run a moderate or large current account surplus in periods of economic boom.

⁵The term "marginal social benefit" is used here in the sense in which it is defined by A. P. Lerner, that is, the benefit to society from the particular expenditure or product under consideration. See *The Economics of Control* (New York: The Macmillan Company, 1946). Opinion varies as to which interest rate is appropriate for use in government benefit cost calculations. Eckstein suggests a rate for governments in the United States of 6 per cent. See Otto Eckstein, *Water Resource Development* (Cambridge: Harvard University Press, 1958), 94-104. Hirschleifer, DeHaven and Millman argue it should be substantially higher than this and suggest 10 per cent. See *Water Supply: Economics, Technology and Policy* (Chicago: University of Chicago Press, 1960), 144-51.

Some indication of the importance of provincial capital expenditures both in terms of their absolute size and relative to the total provincial budget is given by the data in Table 2:6. These data show that provincial capital expenditures currently amount to about \$700 million, or more than 20 per cent of their total expenditures net of transfers to municipalities. If the provinces were to increase the size of their capital spending program and if they financed it all on a deficit basis it would clearly make a very sizeable contribution to supporting the level of economic activity. A deficit of \$700 million is larger than any deficit recorded on a national accounts basis by the federal government during the post-war period with the exception of the year 1958.

TABLE 2:6 Provincial expenditures and revenues, Canada, 1962

	millions of dollars
EXPENDITURES	
Goods and services: Total.....	1,606
Fixed capital.....	690
Transfer to persons.....	1,421
Interest on public debt.....	177
Subsidies.....	31
Transfers to municipalities.....	1,050
Total expenditures.....	4,285
Total less transfers to municipalities.....	3,235
REVENUES	
Direct taxes: Persons.....	600
Corporations.....	422
Indirect taxes.....	1,516
Investment income.....	478
Contributions to social insurance and government pension funds.....	269
Transfers from other levels of government.....	1,111
Total revenues.....	4,396

Source: *National Accounts: Income and Expenditure*, 1962.

To be most effective a provincial fiscal policy of this kind should be pursued in co-operation with federal government policy, and a similar policy approach on the part of other provincial governments. One method of achieving this kind of co-ordination would be to have the federal government, or alternatively the Economic Council, call an annual meeting of finance ministers from the provinces and the federal government at some date just prior to the time the majority of governments bring down their budgets. At such a meeting the economic outlook could be assessed, the federal minister could outline in general terms the policy approach the Government of Canada intended to take, and consideration could be given to what would be the most appropriate policy for the various provincial governments. Such an approach has recently been suggested by a former Deputy Provincial Treasurer for one of the provinces.⁶ He cites as one of the advantages of this approach the fact that most of the provinces do not have a staff capable of making an assessment of future economic developments and recommending an

⁶See A. W. Johnson and J. M. Andrews, *Provincial and Municipal Governments and the Capital Markets* (Ottawa: Queen's Printer, 1962), 113-21.

appropriate program of fiscal action. If the economic staff of most of the provinces is that weak—and there is no reason to believe that Johnson's statement does not represent a correct assessment of the situation—his statement underlines the need for a major strengthening of the economic staff of the various provincial governments. Such a step is an essential prerequisite to the adoption of an effective fiscal policy at the provincial level.

An effective fiscal policy at the provincial level also requires some measures to ensure that budgetary changes at the municipal level complement rather than conflict with provincial policy. The federal government has already made provision for a substantial number of conditional grant programs on capital projects that come under municipal jurisdiction. Thus, there are conditional grants for the construction of hospitals, vocational training schools, municipal winter works, railway grade crossings, municipal trunk sewers and sewage treatment plants, urban redevelopment, and university housing.⁷ In addition, under the Municipal Loan Fund grants are available on a wide range of municipal capital projects, provided the local council is prepared to certify that the project would not have been constructed had such assistance not been available. Although these programs are directed toward the achievement of a variety of goals, many of them were undoubtedly motivated in part by a desire to reduce the high level of unemployment that has existed since 1958. A number of the programs have limits to the amount of funds available and some of them will automatically expire after a period of years unless they are extended by further legislation.

There would be a good deal of merit in replacing the municipal loan fund with a systematic program of conditional grants for municipal capital expenditures, jointly sponsored by the federal government and the provinces, with a provision for automatically varying the size of the grant with the level of unemployment. Alternatively, the size of the grant might be changed annually, agreement being reached at the annual outlook conference suggested above. In designing such a program it is essential to avoid the defects that have marred the effectiveness of the municipal loan fund. Thus, there should be no limit to the amount of funds available under the program. The limitation in the amount of funds allocated to each province under the municipal loan fund has had the effect in Ontario that each municipality, as a matter of fairness, has been allocated a quota in the provincial share of the fund. The result has been that the amount of funds available to any one municipality has been too small to have any significant effect. Moreover, the limitation of grants to capital projects that would not otherwise have been undertaken is basically undesirable. It amounts to an inducement to municipalities to undertake non-essential projects.

Let us now turn to a consideration of what action a province might be expected to take to reduce or eliminate seasonal and structural unemployment. For seasonal unemployment a first step would be to make a concerted attempt to introduce a contra-seasonal bias into the provinces' own expenditure program. Changes in the timing of expenditure should only be made, of course, if the anticipated benefits exceed the costs. By keeping them well informed and by encouraging the advance

⁷A brief summary of the provisions of these programs is given in Johnson and Andrews, *op. cit.*, 152-3.

planning of projects the province could also help ensure that its municipalities co-operate fully in the federal winter works program. It may be desirable, too, for the provinces to press for the extension of the latter program to cover some of their own expenditures. If the provinces were to take a more active role in the field of urban redevelopment they might find that they could, at a relatively small additional cost, time a substantial share of the expenditures involved so that they fell in the period when unemployment was at its seasonal high.

The reduction of structural unemployment requires measures to make it easy for unemployed workers in all areas to obtain additional education or training and for those who are located in stagnant or declining areas to move elsewhere. Present federal programs now go a long way toward providing what is needed in the education and retraining area, provided the provinces co-operate fully in their implementation. But there is still a need for measures that will make it easier for workers in areas of excessively high unemployment to look for work elsewhere and to bear the cost of moving themselves and their families. To the degree that the movement required is an intra-provincial one the responsibility falls squarely on the provinces and they should take steps to develop programs to absorb part of these job-seeking and moving costs.

Although I have suggested above that price stability should be one of the fiscal policy goals of the provincial government, I shall not attempt to outline any detailed program of action in this field. In part this is because there is not as yet very much agreement among economists on what would be effective policy measures in this field. If the federal government should decide to adopt an "incomes policy" and lay down "guidelines" for non-inflationary wage settlements it would be essential that such a policy be formulated in co-operation with the provinces. The provinces would then share the responsibility of seeing that the parties to all wage negotiations were kept informed as to what application the guidelines had in each particular situation. Beyond this, I can only suggest a need for an awareness that price stability is a goal of provincial fiscal policy. And in planning general budgetary policy it is important that each provincial government try to avoid the development of situations in which there will be excessive over-all demand on provincial resources.

In planning for adequate economic growth, as I have noted above, many provinces already have active programs. Indeed, there is a danger here that each province will become so concerned about its own growth that it will indulge in undesirable competitive practices. There have recently been reports of an increase in a form of provincial tariff protection under which a number of provinces give a margin of preference to local suppliers on some or all provincial purchases. In some provinces, it has been alleged, there is also pressure on private firms to follow similar practices. Steps of this kind, like any form of tariff protection, simply reduce the efficiency of the Canadian economy and result in a lower standard of living than might otherwise be enjoyed.

In contrast, measures designed to improve the efficiency of private firms will raise living standards and increase the efficiency of the economy as a whole. Many of the programs adopted by various provincial governments undoubtedly fall into this latter category. A number of these were described above. Further, in

Chapter 1, a number of specific proposals for increasing the rate of economic growth were outlined. Most of these measures fall within the jurisdiction of the provincial governments. Thus there is ample scope for a larger and more active provincial program designed to accelerate the rate at which new techniques are applied, to improve the efficiency of many sectors of the economy, and to encourage the development of new and improved methods. Particular attention should be given to the development of universities and technical schools of the highest quality.

Provincial government budgetary policy also has important implications for economic growth. In some degree, economic growth is dependent on an adequate supply of social capital. New and up-to-date schools and universities, efficient and well-planned roads, streets, and highways, adequate facilities for water supply and sewage disposal, good hospitals and medical centres: all these and similar facilities make a significant contribution to the productivity and efficiency of a community. And it is the primary responsibility of the province and its municipalities to see that these are provided.

The way in which provincial and municipal capital expenditures are financed can also have a significant effect on the rate of growth of a particular region. Thus, if capital expenditures are financed out of current taxation on a pay-as-you-go basis, total expenditures will be substantially lower than they would be if they were financed out of borrowed funds. This is particularly true in the early stages of a major capital expenditure program which follows a long period when capital spending was very small. But in an economy where a fairly constant rate of growth has been taking place with capital spending at a constant ratio to income, the higher level of spending enjoyed by a province that borrows to finance its capital expenditures may gradually disappear. As will be proved later, with a constant rate of borrowing as a percentage of income, annual interest and amortization payments on outstanding debt will exceed or fall short of the annual amount of new borrowing depending on whether the rate of interest to the province exceeds or falls short of the rate of growth of income.⁸ If we assume that the two are the same value, a government that finances new capital expenditure out of borrowed funds and meets current expenditures, including interest and debt amortization, out of tax revenues will eventually reach a stage where its total tax load is at the same level as that of the government that follows a pay-as-you-go approach. When this stage is reached the government that borrows to finance its capital expenditures will have the same level of taxation as the pay-as-you-go government but an expenditure level that is higher by the amount of the interest and amortization payments, of which the major part will be interest. However, this latter expenditure is of the transfer type and will not directly affect the demand for goods and services within the province.

It is an assumption of this approach that the shift to a borrowing program to finance provincial capital expenditures will simply draw on capital funds available to the economy generally and will not significantly reduce other capital expenditures within the province. In fact, of course, the effects will vary depending on whether the economy is operating with or without idle labour and capacity

⁸See Table 5:1, and the mathematical appendix to Chapter 5.

and depending also on whether Canada has a fixed or freely fluctuating exchange rate. When unemployment is present the shift from a pay-as-you-go to a borrowing approach will have a net stimulating effect on the economy and raise the level of income and employment. If the economy is already operating at capacity when the shift occurs, there may still be little or no reduction in other types of capital expenditures if additional borrowed funds can be readily obtained from other countries and additional resources can be made available by an adjustment in the exchange rate and the balance of payments. However, in a fully employed economy with a fixed exchange rate, the shift might well produce inflationary effects which would have to be offset by other measures.

To sum up, a province can provide a substantial stimulus to its own growth over a period of years by shifting from a pay-as-you-go to a borrowing approach in financing its capital expenditures. The benefits of this shift will be particularly marked if it occurs in a period of substantial unemployment. Several provinces—notably Manitoba and Quebec—have recently experienced a shift of this kind with undoubted beneficial effects on their growth.

It has been a conclusion of this analysis that provincial governments in Canada should develop an active fiscal policy directed toward the objectives of low levels of unemployment, reasonable stability of prices, and an adequate rate of economic growth. The traditional view, that fiscal policy is appropriate only at the central government level, cannot be supported. Most of the differences between the position of the central government and that of a province are differences of degree rather than kind and should not prevent an active fiscal policy on the part of provincial governments. This is particularly true of the larger provinces such as Ontario, Quebec, and British Columbia, but even the smaller provinces could take a much more active interest in these questions than they have in the past. Moreover, the differential impact of cyclical fluctuations on the various provinces and the inability of federal fiscal policy to adequately take account of those differences makes possible a valuable and useful role for provincial fiscal policy.

To be fully effective, provincial fiscal policy should be carried out in co-ordination with federal fiscal policy and there should be some arrangement made to help ensure that the policies of the various provincial governments are complementary. There is a need, too, for policies designed to secure effective co-operation at the municipal level, particularly in respect to municipal capital expenditures. Proposals were made for an annual economic outlook and fiscal policy conference sponsored by the Economic Council and for a regular system of grants toward the cost of municipal construction, jointly sponsored by the federal government and the provinces, with the size of the grant to be varied on a counter-cyclical basis.

If the provincial governments are to adopt active fiscal policies it will also be desirable to secure a substantial strengthening of the economic staff employed by the various provincial governments. Although the situation varies a good deal from province to province, it is generally true that provincial governments do not employ as many competent economists as the size and economic effects of their budgetary operations justify. There is a particular need for these governments to add to their staffs a few economists of the very highest calibre.

It has also been concluded that the provinces can carry out a counter-cyclical fiscal policy most effectively in the context of some form of a capital budget. The reason for this is largely political. Given the prejudice that exists against deficit finance, the provinces will be able more easily to pursue a fiscal policy that requires substantial deficits of total expenditures over revenues in some periods and small deficits or surpluses at other times if they keep their capital expenditures in a separate budget and show in the current portion of their budget a deficit or surplus for current revenues and expenditures only.

In some measure the policy recommended here may involve the provinces in pursuing a fiscal policy that runs counter to that of the federal government. If the difference is due to a belief by the provinces that federal policy is inadequate, such policy measures might well be supplemented by direct pressure on Ottawa to change its policy. Such pressure would be more likely to occur if the provinces were actively interested in the fiscal policy area and were equipped with an economic staff capable of making informed judgments on policy questions. But at times, individual provinces might find it necessary to take policy steps to supplement or offset federal measures. It is not at all clear that such an approach would necessarily increase the net debt charges incurred by the provinces, since in some periods an active fiscal policy might call for larger surpluses or smaller deficits as well as the reverse. To the degree that higher debt charges were involved the province would have to compare the benefits to be gained with the additional costs required in deciding how far to pursue such a policy.

The ability of a provincial government to pursue an independent fiscal policy is closely related to its ability to borrow the funds needed to finance any deficits involved in such a policy. It has sometimes been argued that the provinces cannot be expected to borrow to support a policy of deficit financing in periods of economic recession and that for this reason the federal government should be prepared to advance funds to them in such periods, in effect, borrowing on their behalf.⁹ In my view, this argument seriously underestimates the strength of the borrowing position of the provinces. In some degree, it probably stems from an implicit belief that the typical recession will be one which involves a very substantial fall in income and employment. While such a view may have some validity in periods of very serious depression it seems likely that in the more moderate cyclical recessions such as have been experienced in North America over the past two decades, most if not all of the provinces could easily finance a counter-cyclical fiscal policy out of their own borrowing powers. The credit position of the provinces is examined in more detail in the latter part of this study.

⁹See, for example, Johnson and Andrews, *Provincial and Municipal Governments*, 114-15.

CHAPTER 3

Fiscal Policy at the Provincial and Municipal Government Level: the Historical Record

WHAT in fact has been the fiscal policy pursued by provincial and municipal (state and local) governments in Canada and the United States? It has been frequently asserted by economists that these governments follow a cyclically perverse fiscal policy, increasing their deficits in periods of prosperity and attempting to reduce these deficits or run surpluses in periods of recession. The evidence examined below suggests that this conclusion is based largely on the experience of the 1930's. During cyclical fluctuations of more moderate amplitude, such as those that have been characteristic of the post-war era, the budgetary behaviour of these governments has more often been moderately counter-cyclical. Moreover, the data also suggest that when the balanced-budget multiplier effects of their expenditures are considered these governments have made a modest but significant contribution to the growth of income over the post-war period. Let us consider the evidence. We shall look first at experience in the United States and then consider Canadian data.

The data in Table 3:1 indicate that over the past thirty-five years budget deficits of state and local governments in the United States have made relatively little contribution toward supporting the level of income. Thus, over the period

TABLE 3:1 National accounts deficits and surpluses of state and local governments in the United States in relation to their expenditures on new construction and to gross national product, 1929-63

	Net deficit (-) or surplus of state and local governments					
	Excluding	Including	Excluding S.S.F.		Including S.S.F.	
			Percentage	Percentage	Percentage	Percentage
	Social security funds		of new construction	of gross national product	of new construction	of gross national product
	(1)	(2)	(3)	(4)	(5)	(6)
	billions of dollars					
1929-33.....	-1.9	-1.6	21%	.5%	17%	.4%
1934-39.....	2.7	3.5	(33)	(.6)	(42)	(.7)
1940-45.....	10.6	11.7	(179)	(1.1)	(197)	(1.2)
1946-50.....	-.7	1.7	4	—	(10)	(.1)
1951-55.....	-6.8	-1.9	18	.4	5	.1
1956-58.....	-8.2	-3.6	25	.6	11	.3
1959-61.....	-6.9	-.6	18	.3	1	—
1962.....	-2.1	.4	15	.4	(3)	(.1)

Source: *U.S. Income and Output*, Washington, 1958; and *Survey of Current Business*, July 1963 and earlier issues.

Note: Data in brackets in columns 3 to 6 indicate a surplus position. S.S.F. stands for Social Security Funds.

since 1929 the combined deficit of state and local governments has rarely exceeded 25 per cent of their new construction expenditures (see Column 3) and would be an even smaller proportion of their total capital spending. Between 1952 and 1957 construction accounted for about 84 per cent of state and local capital expenditures. If the pension and other social security funds of these governments are included these percentages are much smaller (see Column 5). Even in the period from 1929 to 1933, a period when income was falling sharply, the combined deficit of all state and local governments amounted to only 21 per cent of their construction expenditures. After 1933 this deficit turned into a surplus, and over the period 1934-39 all state and local governments ran a surplus equal to one-third of their new construction expenditures and equal to .6 per cent of gross national product.

Over the entire period from 1929 to 1961 state and local governments financed only about 7.5 per cent of their new construction expenditures on a deficit basis, and if social security funds are included they actually showed a modest surplus over the period. Even for the post-war period from 1946 to 1961 the total combined deficit amounted to only about 18 per cent of new construction expenditures. If social security funds are included this ratio falls to just over 3 per cent. In 1958, with unemployment running at close to 7 per cent of the labour force, state and local governments financed only about 31 per cent of their new construction expenditures through borrowing. And if contributions to social insurance funds are included this net borrowing or deficit falls to 17 per cent of new construction. Since new construction expenditures of state and local governments currently amount to about 2.5 per cent of gross national product, it is clear that if a larger proportion of these were financed out of borrowing rather than out of current revenue it would make a significant contribution to increasing the level of income and employment in the American economy. For example, new construction expenditures of state and local governments amounted to \$14.7 billion in 1963. If the proportion of this total financed out of borrowing were raised to two-thirds it would have a supporting effect on the American economy about the equivalent of a tax cut of \$7 to 8 billion. This is about two-thirds of the tax cut put into effect by the federal government in early 1964.

In both instances the effects of the increased deficit would be partially or completely offset if the additional borrowing required to finance it simply raised interest rates and caused a decline in other capital expenditures. However, in circumstances of substantial unemployment, the monetary authorities could avoid this offsetting effect by additional monetary expansion.

All of the above data are based on the national accounts version of state and local government budgets. However, regular budget data should not differ substantially from this. A principal difference would be the inclusion of the purchase of land and other existing assets in the regular budget. In 1960 this item would have added \$1.3 billion (net) to the expenditure side of the budget. In examining combined data it is also necessary to recognize that many individual states or local governments may finance a much larger share of their new construction expenditures out of borrowing than is shown by the above data. This will be offset in the total by other governments that finance all or most of their new construction

out of current revenues or even maintain a surplus over both capital and current expenditures. The revenue data include grants by the federal government, many of which are for the support of construction programs.

Let us turn to a consideration of the cyclical behaviour of state and local governments. A recent study by E. C. Brown, using as a criterion of the effects of government finance the estimated full employment level of revenues and expenditures, showed that the full employment level of state and local expenditures remained at a high level from 1929 through 1932, then declined sharply, showed a moderate recovery about 1936 but did not regain its 1929 level until 1939.¹ In contrast, the full employment level of tax revenues increased steadily from 1929 to 1932, as tax rates were raised in an effort to offset declining yields, and remained at a high level throughout the remainder of the thirties. As a result, on a full employment basis the moderate deficits registered from 1929 to 1931 had disappeared by 1932 and from that date on were replaced by substantial surpluses. Thus, from 1932 on, state and local budgets were a decidedly restraining force in the American economy.

For the war-time period it is clear that state and local government finance was an anti-inflationary force of some significance. Thus, the data in Table 3:2 show that all state and local governments accumulated a surplus of \$10.6 billion (\$11.7 billion if social security funds are included) over the period 1940 to 1945.

TABLE 3:2 Behaviour of state and local government revenues and expenditures, United States, post-war cycles, 1948-63

	Revenues	Expenditures	Surplus or deficit
Increases in billions of dollars			
4Q. '48P to 4Q. '49T.....	1.7 (.4)	3.0 (.7)	-1.3 (-.3)
4Q. '49T to 3Q. '53P.....	7.4 (.5)	6.1 (.4)	1.3 (.1)
3Q. '53P to 3Q. '54T.....	1.8 (.4)	3.3 (.8)	-1.6 (-.4)
3Q. '54T to 3Q. '57P.....	9.8 (.8)	9.1 (.8)	.7 (.1)
3Q. '57P to 2Q. '58T.....	2.4 (.8)	3.7 (1.2)	-1.3 (-.4)
2Q. '58T to 2Q. '60P.....	9.2 (1.1)	6.0 (.8)	3.1 (.4)
2Q. '60P to 1Q. '61T.....	2.5 (.8)	3.8 (.5)	-1.3 (-.4)
1Q. '61T to 3Q. '63.....	11.9 (1.2)	10.6 (1.1)	1.3 (.1)
Four expansions 1949-63.....	38.2 (.8)	31.8 (.7)	6.4 (.1)
Four recessions 1948-61.....	8.4 (.6)	13.8 (1.0)	-5.4 (-.4)

Source: *U.S. Income and Output and Survey of Current Business*.

Note: Data in brackets are quarterly averages. Decrease in surplus or increase in deficit shown as negative.

Peaks (P) and troughs (T) are taken from the business cycle chronology of the National Bureau of Economic Research.

In the post-war period, if the initial expansion from 1946 to 1948 is excluded, there is evidence that state and local government finance shows a moderately counter-cyclical pattern. Thus, the data in Table 3:2 show that on the average over the post-war period during periods of expansion revenues of state and local governments increased more rapidly than their expenditures and deficits declined

¹E. C. Brown, "Fiscal Policy in the 'Thirties: A Reappraisal", *American Economic Review*, December 1956.

or surpluses increased. In periods of recession, the opposite took place, expenditures increased more rapidly than revenues and budgets moved toward a deficit position. It seems likely that much of this mild counter-cyclical pattern represents the built-in-stability inherent in some degree even in state and local government budgets. In comparison with the corresponding changes that took place in the budgetary position of the federal government during this period, the shift in state and local government budgets was comparatively small. Thus, during four periods of expansion between 1949 and 1963 the increase in state and local government revenues exceeded the increase in expenditures by \$6.4 billion; the corresponding margin in the federal budget during this period was \$26.0 billion. During four recessions from 1948 to 1961 state and local expenditures rose by \$5.4 billion more than revenues; the corresponding margin at the federal level was \$31.6 billion.

Most of this mild counter-cyclical pattern of state and local government expenditure and revenue took place against a background of rapid growth in expenditures. Thus, between 1945 and 1963 state and local government expenditures on goods and services increased from \$19.1 billion to \$58.8 billion (for data in 1963 prices) or by just short of 20 per cent of the \$202 billion growth in real gross national product during this period. Even if the entire increase in this expenditure had been offset by higher tax and other revenues—in fact, the state and local budgetary surplus declined from \$4.7 billion to \$1.1 billion over this period (in 1963 prices)—it is clear from the theory of the balanced-budget multiplier that this growth in state and local government expenditure must have had a substantial supporting influence upon the American economy. An additional \$40 billion of government expenditures on goods and services adds substantially to the demand for the economy's output. An equivalent increase in tax revenues will not reduce private spending by an equal amount since higher taxes will result in some reduction in savings as well as some cut in private spending. On balance, some stimulating effect on the economy remains. If, after the additional government spending and taxes, private disposable income and spending is unchanged, the net stimulus will be equal to the amount of the increase in the government spending for goods and services.

In periods of full employment this stimulus may simply raise interest rates and reduce expenditures in other sectors of the economy. In addition, it may accentuate existing inflationary pressures and by leading to additional imports reduce the current account surplus in the balance of payments.

Let us turn now to a consideration of the role that has been played by provincial and municipal governments in Canada over the past few decades. Although the general pattern is similar to that of state and local governments in the United States there are important differences as well. In the late 1920's the combined deficits of these two levels of government were not too different relative to their capital expenditures or relative to gross national product from the pattern that has prevailed in recent years. However, when we examine data for the provinces and municipalities separately, it becomes apparent that the provinces are now being financed much more conservatively than they were in the late twenties, whereas the municipalities are running much larger over-all deficits. For example,

TABLE 3:3 National accounts deficits and surpluses of provincial and municipal governments, Canada, in relation to capital expenditures and gross national product, 1926-62

Net deficit (—) or surplus of municipal and provincial governments			
	Including	Excluding	Excluding employee pension funds
	Employee pension funds		Percentage of capital expenditures Percentage of gross national product
	(1)	(2)	(3) (4)
	millions of dollars		
1926-28.....	-97	-103	37% .6%
1929-33.....	-586	-601	106 2.5
1934-39.....	-372	-385	62 1.4
1940-45.....	675	655	(115) (1.0)
1946-50.....	-46	-106	13 .3
1951-55.....	-136	-252	11 .3
1956-61.....	-1,747	-2,123	33 1.0
1962.....	-296	-395	28 1.0

Note: Data in brackets indicate a surplus. Pension funds are for government employees.

Source: *National Accounts: Income and Expenditure*, 1926-56 and 1962 and *Private and Public Investment in Canada*, 1926-1951.

the combined municipal deficit (on a national accounts basis) amounted to 1.0 per cent of gross national product over the period 1956 to 1961 compared with only .3 per cent in the period 1926 to 1928 (see Table 3:5).

In the early thirties, as was true in the United States, both the provinces and municipalities began to run substantial deficits. However, in Canada these deficits were on a much larger scale. Thus, for the period 1929-33 the over-all deficit of these governments amounted to 106 per cent of their capital expenditures and 2.5 per cent of gross national product compared with the corresponding percentages of 21 per cent of construction expenditures and .5 per cent of national product in the United States. Moreover, in the period from 1934 to 1939, provin-

TABLE 3:4 National accounts deficits and surpluses of provincial governments, Canada, in relation to provincial capital expenditures and gross national product, 1926-62

Net deficit (—) or surplus of provincial governments			
	Including	Excluding	Excluding employee pension funds
	Employee pension funds		Percentage of capital expenditures Percentage of gross national product
	(1)	(2)	(3) (4)
	millions of dollars		
1926-28.....	-44	-47	40% .3%
1929-33.....	-336	-346	118 1.4
1934-39.....	-447	-452	99 1.5
1940-45.....	440	426	(157) (.7)
1946-50.....	298	249	(29) (.3)
1951-55.....	693	595	(41) (.5)
1956-61.....	218	-84	3 —
1962.....	111	31	(4) (.1)

Note: Data in brackets are for a surplus. Pension funds are for provincial government employees.

Source: *National Accounts: Income and Expenditure*, 1926-56 and 1962 and *Private and Public Investment in Canada*, 1926-1951.

TABLE 3:5 National accounts deficits and surpluses of municipal governments, Canada, in relation to municipal capital expenditures and gross national product, 1926-62

	Net deficit (—) or surplus of municipal governments			
	Including	Excluding	Excluding employee pension funds	
	Employee pension funds		Percentage of capital expenditures	Percentage of gross national product
	(1)	(2)	(3)	(4)
	millions of dollars			
1926-28.....	—53	—56	34%	.3%
1929-33.....	—250	—255	91	1.1
1934-39.....	75	67	(32)	(.2)
1940-45.....	235	229	(101)	(.4)
1946-50.....	—344	—355	45	.5
1951-55.....	—829	—847	52	.7
1956-61.....	—1,965	—2,039	65	1.0
1962.....	—407	—426	58	1.1

Note: Data in brackets are for a surplus. Pension funds are those of municipal government employees.

Source: Same as Table 3:4.

cial and municipal governments in Canada continued to run very substantial deficits, whereas in the United States these levels of government had begun to run moderate surpluses. The data in Table 3:4 indicate that all of this deficit occurred at the provincial level. In contrast, the municipalities, their credit all but exhausted in view of the low levels of income and the lack of any strong move toward easy money, began to show a small surplus.

In the war period both provincial and municipal governments in Canada ran moderate surpluses, thus contributing to the anti-inflationary policy required in that period. In terms of their relative size these surpluses were very similar to those recorded by state and local governments in the United States.

In the post-war period, the municipalities, faced with the problem of making good a major shortage of social capital, soon began to run substantial deficits. Over the period from 1945 to 1962 these have varied from .5 to 1.1 per cent of gross national product and from 45 to 65 per cent of municipal capital expenditures. In contrast, the provinces have been financed on a very conservative basis throughout this period. Until the late fifties they recorded quite substantial surpluses, from .3 to .7 per cent of national product, and even now, despite a capital spending program of over 1.5 per cent of national product, they continue to show a small surplus or very modest deficit.

The pattern of expenditure at the provincial level varies widely among different provinces. Thus, as the data in Table 3:6 indicate, over the past seven years, two provinces, Manitoba and Quebec, have shifted from a position of balanced or nearly balanced budgets to deficits of 1.5 per cent or more of personal income. In contrast, the three westernmost provinces have continued to run moderate to large surpluses or small deficits. Ontario and the Atlantic provinces are the only areas that have shown a consistent deficit position throughout the period since 1957. In Ontario, these deficits have varied over the relatively narrow range of from .7 to 1.1 per cent of provincial personal income. Deficits in the Atlantic area

have increased significantly in the past four years and are now running close to 2 per cent of personal income in that region. Taking all provinces together, the combined deficits have varied from almost nil in 1957 to as high as 1.2 per cent of personal income in 1960-61.

TABLE 3:6 Deficits or surpluses of provincial governments, Canada, by areas or provinces, 1957-83

	Net deficit (—) or surplus as percentage of personal income						
	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
Atlantic.....	-1.3%	— .6%	— .8%	-1.9%	-1.5%	-1.9%	-1.7%
Quebec.....	.4	.4	.1	-1.6	-1.3	-1.2	-1.6
Ontario.....	— .7	-1.0	-1.1	— .9	-1.0	— .8	-1.1
Manitoba.....	-2	-1.7	-2.1	-2.4	-1.4	-1.5	-1.5
Saskatchewan.....	1.2	.4	.3	— .1	— .2	1.5	— .1
Alberta.....	2.8	1.1	2.3	-1.0	— .3	.1	— .2
British Columbia.....	— .2	1.1	1.1	— .4	.3	.2	—
CANADA.....	—	— .2	— .3	-1.2	— .9	— .7	-1.1

Note: Deficits and surpluses are on account of all revenues and expenditures, the difference between Net General Expenditures and Net General Revenues as reported by D.B.S.

Source: *Financial Statistics of Provincial Governments and National Accounts: Income and Expenditure*, 1962.

Over the past four years the average level of provincial deficits has been about 1 per cent of personal income.

Turning now to the cyclical behaviour of provincial and municipal financing we find a pattern for the post-war period similar to that which has prevailed in the United States, namely a mildly counter-cyclical pattern with revenues increasing more rapidly than expenditures in periods of expansion and expenditures rising more rapidly than revenues in periods of contraction. Thus, over the four periods of expansion from 1950 to 1963 provincial-municipal revenues increased by \$4,584 million compared with an increase of only \$4,185 million in expenditures (See Table 3:7). During the three contractions in this period expenditures rose \$1,344 million whereas revenues increased by only \$600 million. The behaviour of provincial and municipal budgets was similar to that of the federal budget but the changes were much smaller in magnitude. Thus the rise in provincial and municipal revenues exceeded the increase in expenditures by about \$400 million in four post-war expansions or about one-fourth of the corresponding difference between revenues and expenditures at the federal level in the same period. During the three periods of contraction, the growth in provincial and municipal expenditures exceeded the rise in revenues by \$744 million or about one-third of the corresponding change at the federal level. This pattern undoubtedly reflects in part some element of built-in-flexibility in provincial and municipal budgets. It may also reflect a reluctance to raise tax rates in periods of declining income.

As was found true in the United States, there is evidence that the rapid upward growth in provincial and municipal expenditures on goods and services provided substantial support to the growth of Canada's national product. For data in constant 1957 prices municipal and provincial expenditures on goods and services increased by \$3.6 billion between 1945 and 1963 or by just under 20 per

cent of the \$18.3 billion increase in Canada's gross national product. Over the same period the combined budgetary position of these two levels of government shifted from a surplus of \$127 million in 1945 to a deficit of \$457 million in 1963. If we apply a simple balanced-budget multiplier analysis to these data we can conclude that provincial and municipal expenditures on goods and services have added some \$3.6 billion in 1957 prices to the demand for goods and services since 1945. In addition, the shift from a small surplus to a moderate deficit will have added some further stimulus to the Canadian economy.

TABLE 3:7 Behaviour of provincial and municipal government revenues and expenditures, Canada, post-war cycles, 1950-63

	Revenues	Expenditures	Surplus or deficit
Increases in millions of dollars			
1Q. '50T to 2Q. '53P.....	760 (58)	624 (45)	136 (11)
2Q. '53P to 2Q. '54T.....	112 (28)	176 (44)	-64 (-16)
2Q. '54T to 2Q. '57P.....	1,116 (93)	1,120 (93)	-4 (-)
2Q. '57P to 2Q. '58T.....	280 (70)	532 (133)	-252 (-63)
2Q. '58T to 1Q. '60P.....	1,036 (148)	1,084 (155)	-48 (-7)
1Q. '60P to 1Q. '61T.....	208 (52)	636 (159)	-428 (-107)
1Q. '61T to 4Q. '63P.....	1,672 (152)	1,357 (123)	315 (29)
Four expansions 1950-63.....	4,584 (107)	4,185 (97)	399 (9)
Three contractions 1950-63.....	600 (50)	1,344 (112)	-744 (-62)

Note: Data in brackets are quarterly averages.

Increase in surplus or decrease in deficit shown as positive.

Decrease in surplus or increase in deficit shown as negative.

The chronology of peaks (P) and troughs (T) is as given in The Royal Commission on Banking and Finance, *Report* (Ottawa, 1964), 402. Data are available only since the first quarter of 1950.

Source: *National Accounts: Income and Expenditure*, by Quarters, 1947-1961 and *Fourth Quarter and Preliminary Annual*, 1963.

In the period before 1958 when the Canadian economy operated at comparatively low levels of unemployment the additional tax-financed expenditures would not add an equal amount to total output and employment. In some measure the additional spending may have been offset by higher interest rates or by compensating policy changes elsewhere in the economy. However, to the degree that output had some elasticity as a result of immigration and capital inflows it may well have accelerated Canada's growth.

Thus far, this analysis has examined provincial fiscal policy entirely from the viewpoint of the impact of their budgets on the over-all level of demand. Changes in the general level of budgetary expenditures and revenues affect mainly unemployment of the cyclical or lack-of-demand type. In addition, the provinces may adopt specific measures to deal with seasonal, frictional, and structural unemployment. Although there is no detailed information on this question my impression from discussion with provincial officials is that up to the present time the provinces have confined themselves mainly to co-operating with federal programs designed to deal with these types of unemployment. For seasonal unemployment the main federal measures are the Municipal Winter Works program and the special \$500 bonus on housing constructed during the winter months. For structural unemployment

arising out of inadequate education or obsolete skills the principal federal measure is the Technical and Vocational Assistance Act. It is possible that in the future the various provinces may take a more active interest in the problem of seasonal and structural unemployment and develop programs of their own to supplement existing federal programs. However, thus far there has been little provincial initiative in this area.

In respect to the second major objective of fiscal policy, reasonable stability of prices, there is little evidence that this has yet become an important goal of fiscal policy at the provincial level. Provincial governments have, at times, shown concern that local wage levels should not get too far out of line with levels prevailing in the rest of Canada. But their concern has related more to the question of maintaining the local rate of growth than preventing a decline in the purchasing power of the dollar.

The third major goal of fiscal policy, an adequate rate of economic growth, has recently begun to receive an increasing amount of attention from provincial governments. All the provinces have long had small industrial development programs designed to promote local industry and to encourage the tourist trade. A number of provinces, too, have maintained special representatives in England and in other foreign countries to promote the export of local products. The major difference in recent developments lies in the range of programs and the degree of interest the provinces have begun to take in this area. Thus, Ontario has recently established a Department of Economics and Development and expenditures under this department have risen from about \$2 million in 1959-60 to \$5.6 million in 1963-64. The department has conducted a vigorous trade expansion program, has sponsored manufacturers' opportunities shows, has established the Ontario Development Agency in order to provide financial, managerial, and technical and other assistance to non-agricultural enterprises in Ontario, has promoted conferences to encourage the standardization of parts used by manufacturers in Ontario, and to study the effects of automation and social change, has promoted shows to demonstrate new products and techniques, and has been active in securing licensing arrangements for new techniques from foreign firms on behalf of Ontario manufacturers. Other provinces, notably Manitoba, Saskatchewan, Quebec, and various Atlantic provinces, have been active along similar lines.

CHAPTER 4

Debt Levels, Social Capital Expenditures, and Annual Borrowing of Provincial and Municipal Governments in Canada

BEFORE proceeding to an evaluation of the significance of the recent and prospective growth in provincial and municipal debt it will be useful to set forth the debt position of the different levels of government in Canada. The present position will be compared with that of earlier periods and with the comparable situation in the United States. The data in Tables 4:1 and 4:2 indicate that the present outstanding volume of debt of all levels of government is not particularly high by historical standards. Thus, in relation to gross national product the current debt level is only slightly higher than the level prevailing in 1921 and 1930 and it is well down from its 1945 level. Provincial debt in 1961 was about the same percentage of gross national product as it was in 1930 and municipal debt was down substantially from its pre-1930 level.

TABLE 4:1 Direct and indirect debt, all governments, Canada, selected years 1867-1961

	All governments*	Federal	Provincial	Municipal
millions of dollars				
1867.....	103			
1913.....	1,298	521	285	505
1921.....	4,883	3,520	633	804
1930.....	6,174	3,779	1,246	1,238
1937.....	7,863	4,855	1,960	1,271
1945.....	21,152	18,438	1,943	1,033
1953.....	23,789	18,276	3,657	2,058
1957.....	28,674	20,456	5,209	3,387
1961.....	41,321	28,400	8,387	5,269
percentage of gross national product				
1867.....	24%			
1913.....	52	21%	11.4%	20.2%
1921.....	108	78	14.1	17.8
1930.....	108	66	21.8	21.6
1937.....	150	92	37.3	24.2
1945.....	179	156	16.4	8.7
1953.....	99	73	14.6	8.2
1957.....	90	64	16.3	10.6
1961.....	111	76	22.5	14.1

*Excludes intergovernmental debt.

Source: Data on gross national product for years 1867 to 1921 taken from O. J. Firestone, *Canada's Economic Development, 1867-1953* (London: Bowes and Bowes, 1958), and adjusted to nearest year. Data on government debt from 1867 to 1937 taken from *Report of the Royal Commission on Dominion-Provincial Relations, I*. All other data from Dominion Bureau of Statistics.

TABLE 4:2 Direct and indirect debt, all governments, Canada, 1961, total and per capita

	All governments*	Federal	Provincial	Municipal
millions of dollars				
Direct.....	31,687	22,652	4,065	5,256
Indirect.....	9,634	5,748	4,322	13
TOTAL.....	41,321	28,400	8,387	5,269
Debt per capita†				
Direct.....	\$1,706	\$1,220	\$219	\$284
Indirect.....	520	310	233	1
TOTAL.....	\$2,226	\$1,530	\$452	\$285

*Excludes intergovernmental debt.

†Debt per capita estimated on basis of July 1962 population.

Source: *A Consolidation of Public Finance Statistics, 1961*, Dominion Bureau of Statistics.

In comparison to the United States, government debt levels are higher in Canada, both on a per-capita basis and as a percentage of gross national product. The major difference lies in the much lower debt level of state governments in the United States as compared with the Canadian provinces. Thus, in 1961 state debt amounted to only 3.9 per cent of gross national product whereas total provincial debt was 22.5 per cent of Canada's gross national product. A significant part of this difference is accounted for by the different pattern of ownership of public utilities in Canada as compared with the United States. Thus, most of the hydro-electric power industry is provincially owned in Canada and a number of provinces also own the telephone industry. In contrast, in the United States except for some federal projects these industries are almost entirely in private hands. However, this does not account for all of the difference since provincial direct debt in Canada amounts to about 11 per cent of gross national product. The remaining difference is probably accounted for by the tendency for both provincial and municipal governments in Canada to finance a larger share of their capital expenditures out of borrowed funds than is true for the corresponding state and local governments in the United States. Borrowing by these latter governments is kept down by constitutional and other restrictions on their freedom to incur debt.

TABLE 4:3 Debt outstanding, all governments, United States, selected years, 1927-61

	All governments	Federal	State	Local
Percentage of gross national product				
1927.....	35%	19%	2.0%	13.4%
1936.....	64	41	4.1	19.4
1946.....	135	128	1.1	6.4
1953.....	82	73	2.1	7.1
1957.....	73	61	3.1	8.9
1961.....	70	56	3.9	10.6
Per capita				
1961.....	\$1,989	\$1,579	\$109	\$301

Source: *Statistical Abstract of the United States, 1963*; and *Historical Statistics of the United States, Colonial Times to 1957*.

It should also be noted that the distinction between direct and indirect (guaranteed) debt is a somewhat misleading one. Some provinces—notably Saskatchewan and, in an earlier period, Manitoba—borrow directly on behalf of their utilities. This explains the high level of direct debt and relatively low level of indirect debt in Saskatchewan (See Table 4:4). Thus, some of the higher level of direct provincial debt as compared with state debt in the United States reflects this pattern of borrowing on behalf of utilities.

Analysis of debt levels in the different provinces in 1962 shows that British Columbia and New Brunswick have the highest provincial-municipal debt level in relation to income, both having a debt level close to 60 per cent of personal income (See Table 4:4).

TABLE 4:4 Provincial and municipal debt as a percentage of personal income, Canadian provinces, 1962

	Provincial debt		Total	Municipal debt	Municipal and provincial debt
	Direct	Indirect			
Percentage of personal income					
Newfoundland.....	18.1	5.7	23.8	4.8	28.7
Prince Edward Island.....	32.3	6.4	38.6	9.4	48.0
Nova Scotia.....	30.7	.6	31.3	12.9	44.2
New Brunswick.....	35.0	8.5	43.5	15.7	59.2
Quebec.....	8.3	11.5	19.8	23.3	43.1
Ontario.....	15.5	12.7	28.2	15.5	43.5
Manitoba.....	22.3	12.3	34.6	12.2	46.8
Saskatchewan.....	29.9	1.4	31.2	11.3	42.5
Alberta.....	1.6	10.2	11.8	22.2	34.0
British Columbia.....	1.0	42.7	43.7	15.0	58.7
CANADA.....	13.2	14.0	27.2	17.1	44.3

Source: *Financial Statistics of Provincial and Municipal Governments*, Dominion Bureau of Statistics.

The lowest debt level on this basis is found in Newfoundland and Alberta, with debt of 28.7 and 34 per cent of personal income respectively. The remaining provinces had debt levels in relation to income falling within the relatively narrow range of from 42.5 to 48 per cent of personal income. Municipal debt levels in relation to income were highest in Quebec and Alberta and lowest in Newfoundland.

Data on outstanding debt are a somewhat misleading basis for judging the net debt position of governments, because many governments were able to build up substantial investment reserves during the war and early post-war years. Although no data are available on the size of these investment reserves which would enable us to estimate a net debt position for each level of government in the various provinces, there are data on the annual net debt charges which deduct interest earned on these reserves from the interest paid on outstanding debt. These data, presented in Table 4:5, show that the three westernmost provinces had negative net debt charges, that is, they were receiving more in interest on their investment reserves than they were required to pay on their outstanding debt. In contrast, the four Atlantic provinces all had net debt charges that were close to

or well in excess of 1 per cent of personal income in the province. Net debt charges on account of municipal debt for 1960 were much more uniform across the country, varying from a low of .18 per cent of personal income in Newfoundland to a high of .58 per cent in New Brunswick and .59 in Alberta.

TABLE 4:5 Net debt charges, provincial and municipal governments, by provinces, 1960

	Provincial		Municipal		Provincial and municipal
	millions of dollars		Percentage of personal income		
Newfoundland.....	3.8	.7	.97%	.18%	1.15%
Prince Edward Island.....	1.5	.3	1.52	.33	1.85
Nova Scotia.....	9.5	3.6	1.11	.42	1.53
New Brunswick.....	6.9	3.6	1.11	.58	1.69
Quebec.....	12.4	29.2	.18	.44	.62
Ontario.....	51.9	44.9	.47	.41	.88
Manitoba.....	.04	4.0	.003	.29	.29
Saskatchewan.....	— .9	4.0	—	.30	.24
Alberta.....	— 15.3	11.8	—	.59	—
British Columbia.....	— .2	10.6	—	.35	.36
CANADA.....	69.6	112.7	.25	.41	.66

Source: *Comparative Statistics of Public Finance, 1956 to 1960*, Dominion Bureau of Statistics, Ottawa, 1960.

Data on interest receipts and payments can be used to provide on an historical basis the net interest position of the three major levels of government in Canada. Thus, as the data in Table 4:6 show, the net interest position of all three levels of government is now much smaller in relation to government revenues than it was in either 1945 or 1929. The decline has been particularly marked at the provincial level, net interest charges having fallen from 13.4 per cent of provincial government revenues in 1929 to 2.5 per cent in 1962. There has also been a significant decline in the ratio of net interest charges to personal income for both provincial and municipal governments. On the other hand, the ratio for the federal government, although down from its high 1945 level, is almost the same as it was in 1929. If we compare the net interest position of the three levels of governments we find that the provinces are in much the strongest position having in 1962 a net interest burden of only 2.5 per cent of their revenue and only .27 per cent of personal income. In contrast, the federal government, despite the fact that it can borrow at a lower rate of interest than any other government, on the basis of these criteria is in much the worst position. Its net interest burden amounts to 12.1 per cent of its revenue and to 2.3 per cent of personal income. The municipalities, taken as a group, occupy an intermediate position, with an interest burden in 1962 amounting to 6.4 per cent of their total revenue and to .63 per cent of personal income.

Using a somewhat different set of data, the recent growth in direct debt and net debt charges of the government of Ontario can be compared with the position of all provinces. These data show that, although debt levels and net debt charges are substantially lower in relation to either personal income or government revenues than they were in 1945, there has been a moderate rise in both in recent

TABLE 4:6 Net interest position, federal, provincial and municipal governments, Canada, selected years, 1929 to 1962

	1929	1945	1956	1959	1962
millions of dollars					
FEDERAL GOVERNMENT					
Interest on public debt.....	122	379	524	678	855
Less interest received.....	15	46	55	128	155
Net interest burden.....	107	333	469	550	700
PROVINCIAL GOVERNMENTS					
Interest on public debt.....	47	89	105	126	177
Less interest received.....	21	20	53	77	95
Net interest.....	26	69	52	49	82
MUNICIPAL GOVERNMENTS					
Interest on public debt.....	66	44	85	159	242
Less interest received.....	17	11	23	34	48
Net interest.....	49	33	62	125	194
Net interest as percentage of personal income:					
Federal government.....	2.3	3.7	2.1	2.1	2.3
Provincial governments.....	.56	.76	.24	.19	.27
Municipal governments.....	1.1	.36	.28	.48	.63
Net interest as percentage of government revenues:					
Federal government.....	28.1	14.6	9.2	10.7	12.1
Provincial governments.....	13.4	12.9	3.1	2.0	2.5
Municipal governments.....	12.6	7.3	4.1	5.7	6.4

Note: Interest received is on loans, advances, and investments. It excludes interest received on public funds. Government revenues were for revenues net of any transfers to other levels of government.

Source: *National Accounts: Income and Expenditure*, 1926-56 and 1962.

years. Moreover, the increase in Ontario has been somewhat larger than is true for all provinces taken as a group. As a result by 1961 per-capita direct debt in Ontario was \$305 compared with \$223 in all provinces, and net debt charges in Ontario amounted to 5.6 per cent of government revenues compared with just 3.0 per cent in all provinces. (See Table 4:7). This more rapid growth in Ontario's debt level reflects a somewhat greater resort to borrowing to finance capital expenditures than has been true for a number of other provinces.

A comparison of provincial and municipal expenditures on fixed capital with the deficits or surpluses recorded by these governments shows some trend toward the financing of a larger proportion of these expenditures out of borrowed funds (See Table 4:8). This is particularly evident at the provincial level and undoubtedly reflects a change in approach on the part of a number of individual provincial governments, notably Manitoba, Quebec and New Brunswick. As a result the budgetary position of all provincial governments shifted from a surplus position for the period 1951-56 to small deficits in the period 1957-59 and quite substantial deficits in the years 1960 to 1962. On the other hand, municipalities have financed 70 per cent or more of their capital expenditures out of borrowed funds throughout the post-war period. Using National Accounts data we find a modest

TABLE 4:7 Direct debt and net debt charges, Ontario and all provinces compared, selected years, 1939-61

Fiscal year ended nearest December 31	Direct debt		Direct debt as percentage of personal income		Direct debt per capita	
	Ontario	All provinces	Ontario	All provinces	Ontario	All provinces
	millions of dollars					
1939.....	737	1,963	43.3%	45.8%	\$199	\$174
1943.....	667	1,845	20.2	23.0	171	156
1945.....	642	1,802	17.6	21.7	160	149
1949.....	682	2,006	15.0	15.8	156	149
1953.....	977	2,464	13.6	13.4	198	166
1957.....	1,251	2,808	13.3	12.1	222	169
1961.....	1,902	4,065	16.5	14.2	305	223

	Net debt charges		Net debt charges as percentage of personal income		Net debt charges as percentage of government revenues	
	Ontario	All provinces	Ontario	All provinces	Ontario	All provinces
	millions of dollars					
1939.....	20.2	57.6	1.2	1.3	23.0	22.4
1943.....	22.1	57.0	.67	.71	18.8	15.8
1945.....	21.0	51.3	.58	.56	15.8	12.2
1949.....	19.4	51.1	.40	.40		6.1
1953.....	22.3	48.4	.31	.26	6.0	3.6
1957.....	31.4	54.8	.34	.24	5.3	2.7
1961.....	51.7	83.9	.45	.30	5.6	3.0

Note: Per-capita data are calculated on the basis of the population in July of the year in question.

Source: *Comparative Statistics of Public Finance, 1945 and 1951 to 1959, 1956 to 1960 and 1933, 1937, 1939, 1941, 1943*, Dominion Bureau of Statistics and Dominion Provincial Conference on Reconstruction; *Statistical Summary, Supplement, 1961*, Bank of Canada.

increase in the ratio of municipal deficits to municipal capital expenditures in the years from 1957 to 1960 but no evidence of a persistent upward trend: the ratio for 1962 was only slightly higher than the average for the period 1951-56.

Some pressure for an increased use of borrowed funds to finance provincial and municipal capital expenditures has undoubtedly arisen as a result of the gradual increase in the relative size of these expenditures (see Table 4:9). These expenditures have risen from 2.1 per cent of gross national product in 1949 to 3.5 per cent in 1962. Both levels of government have shared in this increase, the rise being slightly larger for municipal governments. Schools, hospitals and highways have been major elements in the increase.

Rising capital expenditures have not been the only cause of increased provincial and municipal borrowing. Funds have also been borrowed to finance provincial development funds, advances to government-owned enterprises, the extension of farm credit, and similar loans and advances. And the provincial governments, in particular, have had to extend their guarantee to support the borrowing of their hydro-electric and other utilities. Some indication of the relative importance of these different factors as a source of provincial and municipal borrowing is given by the data in Table 4:10.

TABLE 4:8 Capital expenditures and deficits or surpluses, provincial and municipal governments, Canada, 1957-62

	1951-56	1957	1958	1959	1960	1961	1962
CAPITAL EXPENDITURES (calendar year)							
	millions of dollars						
Provinces.....	1,898	535	518	568	612	547	690
Municipalities.....	2,056	482	511	548	586	607	729
Provinces and municipalities.....	3,954	1,017	1,029	1,116	1,198	1,154	1,419
Deficits (-) or surpluses—National Accounts basis.							
Provinces.....	792	144	66	112	-92	-91	111
Municipalities.....	-1,090	-293	-316	-341	-381	-361	-407
Provinces and municipalities.....	-298	-149	-250	-229	-473	-452	-296
Deficits (-) or surpluses—budgetary approach							
Provinces.....	216	-11	-50	-80	-317	-251	-216
Municipalities.....	-1,410	-416	-437	-522	-687	n.a.	n.a.
Provinces and municipalities.....	-1,194	-427	-487	-602	-1,004		
Deficit as percentage of capital expenditures—National Accounts basis							
Provinces.....					15%	17%	
Municipalities.....	53%	61%	62%	62%	65	59	56%
Provinces and municipalities.....	8	15	24	21	40	39	21
Deficit as percentage of capital expenditures—budgetary approach							
Provinces.....		2%	10%	14%	52%	46%	31%
Municipalities.....	69%	86	85	95	117	n.a.	n.a.
Provinces and municipalities.....	30	42	47	54	84	n.a.	n.a.

Note: Budgetary approach is for net general expenditure and revenue data as estimated by Dominion Bureau of Statistics. These data are for fiscal year ended nearest December 31.

Source: *National Accounts: Income and Expenditure, 1962*; *Financial Statistics of Provincial Governments, 1961 and Preliminary 1962*, Dominion Bureau of Statistics; and Johnson and Andrews, *Provincial and Municipal Governments and the Capital Markets*, 114.

TABLE 4:9 Provincial and municipal capital expenditures as percentage of gross national product

	Provincial	Municipal	Provincial and municipal		Provincial	Municipal	Provincial and municipal
1949...	1.1 %	1.0%	2.1 %	1956...	1.5%	1.4%	2.9%
1950...	1.1	1.2	2.3	1957...	1.7	1.5	3.2
1951...	1.1	1.3	2.3	1958...	1.6	1.6	3.1
1952...	1.2	1.3	2.5	1959...	1.6	1.6	3.2
1953...	1.1	1.3	2.3	1960...	1.7	1.6	3.3
1954...	1.2	1.4	2.6	1961...	1.5	1.6	3.1
1955...	1.3	1.4	2.7	1962...	1.7	1.8	3.5

Source: *National Accounts: Income and Expenditure, 1926-56 and 1962*.

TABLE 4:10 Provincial and municipal deficits and other borrowing requirements, 1946-59

	1946-50	1951-55	1956-59
millions of dollars			
Deficits.....	345	853	1,875
Loans and advances.....	66	570	485
Guarantees.....	653	790	1,422
Debt retirement and sinking funds.....	1,052	1,271	1,249
Gross financing.....	2,116	3,484	5,031

Source: Johnson and Andrews, *Provincial and Municipal Governments and the Capital Markets*, 165.

These data show that while deficits and guaranteed loans have been the major cause of provincial and municipal borrowing, various loans and advances have been a significant factor, accounting for about 13 per cent of all net borrowing in the period 1956-59.

An indication of the relative importance of the bonds outstanding for different levels of government is given by the data in Table 4:11. These data show that there has been a substantial increase in the relative importance of provincial and municipal bonds and a decline in the importance of federal government securities. Thus, between 1953 and 1963 provincial direct and guaranteed securities increased from 14.5 to 23.4 per cent of total bonds outstanding in Canada and municipal securities increased from 7.0 to 11.0 per cent. In the same period Government of Canada securities declined from 63.2 per cent to 46.5 per cent. Although there was a significant amount of borrowing in other countries on the part of provinces, municipalities, and corporations, the total volume of bonds payable in foreign currencies increased from only 10.9 to 13.4 per cent.

Data on the distribution of provincial and municipal bonds show that life insurance companies, various trustee pension funds, and corporations and individuals have been among the principal buyers of municipal and provincial securities in recent years. For provincial government securities various provincially managed funds such as the workmen's compensation boards and sinking funds have also been important buyers (see Table 4:12).

TABLE 4:11 Bonds outstanding, Canada, selected year-ends, 1953-63

Payable in		1953	1958	1963
millions of dollars				
Government of Canada, direct and guaranteed.....	Cdn. \$ only	15,023	16,051	19,893
	Other currencies	614	365	383
	Total	15,637	16,416	20,276
Provincial, direct and guaranteed.....	Cdn. \$ only	2,654	4,484	7,966
	Other currencies	914	1,304	2,200
	Total	3,568	5,788	10,166
Municipal, direct and guaranteed.....	Cdn. \$ only	1,351	2,303	3,750
	Other currencies	378	761	1,022
	Total	1,729	3,063	4,772
Corporate and institutional.....	Cdn. \$ only	2,999	5,405	6,095
	Other currencies	787	1,636	2,228
	Total	3,786	7,042	8,322
TOTAL.....	Cdn. \$ only	22,027	28,243	37,704
	Other currencies	2,693	4,066	5,832
	Total	24,720	32,309	43,535
Percentage of total bonds outstanding				
Government of Canada.....		63.2%	50.7%	46.5%
Provincial, direct and guaranteed.....		14.5	18.0	23.4
Municipal, direct and guaranteed.....		7.0	9.5	11.0
Corporate and institutional.....		15.3	21.8	19.1
TOTAL.....		100.0	100.0	100.0
—Canadian \$ only.....		89.1	87.4	86.6
—Other currencies.....		10.9	12.6	13.4

Source: Bank of Canada, *Statistical Summary* and Annual Supplements.

TABLE 4:12 Distribution of holdings of municipal and provincial direct and guaranteed bonds, 1957 and 1962

As at December 31	Provincial		Municipal	
	1957	1962	1957	1962
	millions of dollars			
Chartered banks.....	285	407	168	250
Provincial government funds.....	987	1,266	148	221
Municipal government funds.....	38	90	145	260
Life insurance companies.....	415	917	427	615
Other insurance.....	200	295	97	134
Quebec savings banks.....	86	83	52	39
Trust and mortgage.....	88	167	47	102
Trusteed pension plans.....	825	1,482	278	470
All other resident.....	1,049	2,300	690	1,123
Total resident.....	3,973	7,007	2,052	3,214
Non-resident.....	1,196	2,013	658	1,155
TOTAL.....	5,169	9,020	2,710	4,369

Source: Bank of Canada; *Statistical Summary*, May, 1964.

CHAPTER 5

The Finance of Provincial and Municipal Capital Expenditures

THE recent rapid growth of social capital expenditures at the provincial and municipal level of government has raised concern about the implications of rising debt levels.¹ Is there a danger that provincial and municipal debt may reach dangerously high levels thus weakening the financial position and undermining the independent status of the governments concerned? Is the capital market as presently organized capable of absorbing the large flow of provincial and municipal securities which the financing of these capital expenditures may require? How should our provincial and municipal governments finance their social and other capital expenditures: by borrowing? or out of current tax revenues? or by some combination of these two? And what are the implications for the economy as a whole of these alternative methods of finance? If our governments do borrow should they set up sinking funds or make some comparable provision to amortize their debt? If so, over what period of years should the debt be written off? And what are the implications for the economy as a whole of the use of such sinking funds? The following analysis explores these and other related questions.

In evaluating the burden imposed by provincial or municipal government debt it is useful to distinguish between debt incurred to finance self-liquidating government-owned enterprises such as electric power plants, telephone systems, or waterworks, and debt incurred to finance social capital projects such as highways, new government buildings, schools, and sidewalks, projects which do not directly provide the revenue required to service the debt incurred. The difference between these two types of capital facilities can easily be exaggerated, since when the latter type of project is constructed, there is often a growth in a related source of tax revenue, e.g., highways and gasoline tax revenue. However, this additional tax revenue is usually only loosely related to the new capital facilities. Self-liquidating types of capital are distinctive in that they are usually operated on a basis similar to that of private enterprise. Hence, the debt incurred by these two projects raises no problems which differ in any way from those faced by private enterprises operating in similar fields. If the publicly owned enterprise is efficiently operated it will be able to service its debt without difficulty out of its current operating revenue. Moreover, these enterprises often borrow on their own account, the government being involved only to the extent of providing a guarantee. Accordingly, the following analysis is primarily concerned with direct government borrow-

¹The term "social capital" is used here in its usual sense to include schools, universities, churches and related buildings, hospitals, airports and harbours, sewers and waterworks, bridges, streets and roads and similar facilities.

ing for non-self-liquidating types of capital projects. The question of whether a provincial government should at times run a budgetary deficit which is unrelated to any capital expenditures is examined elsewhere.

Evaluation of the burden imposed by a rising volume of government borrowing can best be made in relation to the growth of income in the province or municipality in question. For, in very large measure, it is a growing population and a rising level of per-capita income that gives rise to the demand for additional social capital facilities and thus the occasion for government borrowing. In Ontario, for example, over the past decade personal income has grown at an average rate of more than 6 per cent per year and the population has increased about 3 per cent per year. In Canada as a whole, the corresponding rates have been 6.0 and 2.5 per cent per annum.

In a mathematical appendix to this chapter it is shown that in a community where income is growing at a constant percentage rate, r , and the government each year borrows a fixed percentage of provincial income, b , the result will be a ratio of government debt (D) to provincial income (Y) as given by the following expression:

$$\frac{D}{Y} = \frac{b}{r} \left[1 - \frac{1}{(1+r)^n} \right]$$

It is clear that as n , the number of years since the borrowing program commenced, increases, the above expression approaches b/r , the percentage of income borrowed divided by the rate of growth of income. In deriving this result it was assumed that the government initially has a debt-free position. However, unless the initial debt burden is very large this will not significantly affect the conclusions.

If we apply this result to recent experience in Ontario, we find that the annual increase in the province's direct debt (before deduction of sinking funds) over the past five years has amounted to about 1.5 per cent of provincial income and the rate of growth of provincial income has been about 6 per cent. Thus, for Ontario in recent years, b has been 1.5 per cent and r 6 per cent. A continuation of government borrowing on this scale combined with a continued growth of income at the rate that has prevailed in recent years would eventually produce a ratio of debt to income of 1.5/6.0 or 25 per cent. This compares with a ratio of direct debt to income (before deduction of sinking funds) in 1961 of just under 17 per cent. Thus, while continued borrowing on the scale in effect in recent years would produce a continuing rise in the province's debt level, the ratio of debt to income would eventually approach a constant value of .25. This assumes, of course, a continued rise in provincial income at about the same rate as has been experienced over the past decade. The fact that Ontario's debt-to-income ratio was well above zero when this borrowing rate commenced does not affect the validity of this conclusion. It simply means that this final constant ratio will be approached more quickly than would otherwise be true.

Further, as is shown in the mathematical appendix, if the rate of interest (i)

remains constant, the ratio of interest payments (I) to income (Y) in the above model will be given by:

$$\frac{I}{Y} = \frac{i \cdot b}{r} \left[1 - \frac{1}{(1+r)^n} \right].$$

And as n , the number of years becomes very large, the value of this expression approaches $i \cdot b / r$.

Thus, assuming as before that b is 1.5 per cent and r is 6 per cent, if i is 5 per cent the ratio of interest payments to income will eventually approach 1.25 per cent. In other words, a tax rate equal to 1.25 per cent of provincial income will be required to service the interest payments on the debt occasioned by the borrowing program described above. With provincial revenues running at around 8.6 per cent of personal income, this implies an interest burden equal to about 14.5 per cent of provincial government revenues. This compares with Ontario's current net debt charges of about 5.6 per cent of government revenues.

Up to this point the growth in government debt has been analysed on the assumption that no provision is being made for a sinking fund to retire the debt. In fact, of course, many provincial and municipal governments make specific provision for sinking-fund payments to retire any new debt that is incurred. Where debt is incurred to finance capital assets these sinking-fund payments can be considered the equivalent of an allowance for the depreciation of government-owned capital. If the amortization period over which the sinking fund is planned corresponds to the expected life of the capital assets this equivalence between sinking-fund payments and a charge for depreciation will be fairly precise. In fact, there appears to be little relation between the expected life of government-owned capital assets and the length of term adopted for sinking-fund provisions.

Let us suppose that as each new issue of debt is incurred the government sets up a sinking fund to which it makes an annual contribution sufficient to accumulate to the original amount of the debt issued over the appropriate amortization period. In the appendix, formulas are developed—again assuming a constant rate of borrowing, a constant rate of growth of income, and a constant interest rate—which show after various lengths of time the ratio of annual sinking-fund payments and annual interest payments to the amount of new borrowing and the level of income.

Using these relationships it is possible to illustrate the effects of a government borrowing program under different assumptions as to the level of interest rates and the length of the amortization period. In recent years the growth in the gross debt of the Province of Ontario, including both direct and indirect debt, has amounted on the average to about 2.5 per cent of personal income in the province. Let us then consider the effects of a borrowing program under which each year the province borrows an amount equal to 3 per cent of personal income in the province. Assume also that provincial income continues to grow at a rate of 6 per cent per year. In Table 5:1 the effects of such a borrowing program on the ratio of provincial debt to income and on the ratio of annual interest and amortization charges to provincial income are shown for three different lengths

of amortization period, fifty, twenty-five and ten years, for three interest-rate levels, 4 per cent, 5 per cent, and 6 per cent, and for various periods from the beginning of the borrowing program ranging from five up to fifty years.

As these data show, under such a borrowing program government debt outstanding would gradually rise to a level equal to about 47 per cent of provincial income when amortized over a fifty-year period; to 38 per cent if amortized over a twenty-five-year period; and to 22 per cent when amortized over a ten-year period. This compares with the present (1961) ratio of 30 per cent (for direct and indirect debt outstanding before deduction of sinking funds). Since the present direct debt is amortized over a thirty-year period,² it is evident that, even if borrowing by the Ontario government on a direct and indirect basis were to rise from its present level of about 2.5 per cent of provincial income to a 3 per cent level and then continued at this rate, the ratio of debt to income would rise only moderately as a ratio to provincial income. On the basis of the present income level in Ontario (1963), borrowing at the rate of 3 per cent of provincial income would amount to about \$400 million. As of 1961 a debt-to-provincial-income ratio of 47 per cent would have meant a gross outstanding debt of about 5.8 billion compared with an actual debt of about \$3.7 billion as of March 31, 1961.

TABLE 5:1 A model illustrating the growth of provincial debt and debt service charges in relation to provincial income. Assumptions: annual borrowing equal to 3 per cent of personal income; personal income grows at a constant rate of 6 per cent per annum; initial debt is zero.

Years of borrowing	Gross debt as percentage of income	Interest and amortization charges as percentage of income— with interest rate of:		
		4%	5%	6%
I. Debt amortized over a fifty-year period.				
0	0	0	0	0
5	13%	0.6%	0.7%	0.8%
10	22	1.0	1.2	1.4
15	29	1.4	1.6	1.8
20	34	1.6	1.9	2.2
25	38	1.8	2.1	2.4
40	45	2.1	2.5	2.9
50	47	2.2	2.6	3.0
II. Debt amortized over a twenty-five-year period.				
0	0	0	0	0
5	13%	0.8%	0.9%	1.0%
10	22	1.4	1.6	1.7
15	29	1.9	2.1	2.3
20	34	2.2	2.4	2.7
25	38	2.4	2.7	3.0
40	38	2.4	2.7	3.0
continues at this level in all succeeding years.				
III. Debt amortized over a ten-year period.				
0	0	0	0	0
5	13%	1.56%	1.66%	1.72%
10	22	2.7	2.85	3.0
continues at this level in all succeeding years.				

²However, regular sinking-fund payments do not apply to all the direct debt and have only recently been started.

Table 5:1 also gives data on the size of the interest and amortization payments that would be required to service a borrowing program of 3 per cent of personal income. These data show that with an interest rate of 6 per cent the annual interest and amortization payment will eventually reach the same level as the size of the annual new debt incurred, namely 3 per cent of income. For interest rates higher than 6 per cent, by the end of the amortization period the interest and amortization payments would exceed the annual amount of new borrowings; for rates of interest below 6 per cent the annual interest and amortization payments would be less than the annual amount of new borrowings. More generally it can be proved that if the interest rate (i) exceeds the rate of growth (r) the amount of annual interest and amortization payments by the end of a period of years equal to or greater than the length of the amortization period will exceed the amount of annual borrowings. If the interest rate (i) is less than the rate of growth (r), the annual service cost of the debt will be less than the amount of new borrowings. Where i is equal to r the two amounts will be equal (a proof of this is given in the appendix).

As the data in Table 5:1 also make clear, the shorter the amortization period the more quickly the annual interest and amortization payments increase in relation to provincial income. Thus, with an interest rate of 5 per cent, annual interest and amortization payments amount, at the end of ten years, to 1.2 per cent of income when the amortization period is fifty years, to 1.6 per cent when the period is twenty-five years, and to 2.85 per cent when the period is ten years.

The significance of the recent and prospective growth of provincial and municipal debt in Ontario and other parts of Canada can also be related to a model of the growth of income and capital assets in the economy as a whole. Let us assume that Canadians annually save (s) 12 per cent of their net income and that income is growing at a rate (r) of 6 per cent per annum. It is assumed that part of these savings are invested directly or indirectly in new capital assets acquired by business firms and part in securities issued by various levels of government. If continuous growth took place on this pattern it can be shown that the ratio of total net private capital assets and government debt to income would eventually approach the ratio s/r , in this instance 2.0.³ In terms of Canada's present level of national income, which in 1963 was \$32.6 billion, this implies a total level of outstanding private assets, whose ownership is reflected in various private securities and equity claims or in government securities, to the amount of \$65.2 billion. In other words, \$65.2 billion is the amount of private investment assets we could expect to find in Canada in 1963 if the above pattern of growth had continued long enough to allow an approach to the equilibrium ratio.

If provincial government borrowing, including both direct and indirect debt, had been maintained at a level equal to 2.5 per cent of national income in the above model, total provincial securities outstanding would eventually approach a ratio to national income equal to 2.5/6.0, or 41.7 per cent. In terms of the present level of national income in Canada this would imply a provincial debt of

³The proof is essentially similar to that for the debt-to-income model of government borrowing developed in the appendix to this chapter.

about \$13.5 billion. This compares with an actual debt before deduction of sinking funds on March 31, 1963, of just under \$10 billion.

This discrepancy between actual and theoretical debt levels can be explained by a number of factors. First, the higher current level of borrowing has not continued long enough to raise provincial debt to the expected theoretical level. For example, in the decade ending in 1953, direct and indirect provincial debt grew at a rate equal to only about 1.4 per cent of national income in contrast to the 2.5 per cent ratio that has prevailed on the average over the last decade. In addition, because of the post-war inflation money income grew by more than 8 per cent per year in the decade ending in 1953. Other departures from the theoretical model are due to the fact that the growth in debt did not start from a zero debt level: the ratio of provincial debt to national income was 23 per cent some twenty years ago, and even after twenty years' growth from an initial level of zero the actual ratio would only have reached about 70 per cent of the final equilibrium ratio.

However, to the degree that the above model approximates conditions in the Canadian economy it tells us that continued provincial borrowing at the rate prevailing in recent years would eventually produce a provincial debt amounting to about 21 per cent of all financial and other capital assets in the hands of individuals.⁴ This conclusion must be modified to the extent that provincial governments maintain sinking funds against their debt.

Applying the same model to the growth of municipal debt in Canada, we find that over the decade ending in 1961 municipal debt has been increasing at a rate equal to about 1.68 per cent of national income. Continuation of this pattern in an economy whose income is growing at 6 per cent per annum would give an eventual ratio of municipal debt to income of $1.68/6.0$ or 28 per cent. In terms of Canada's national income in 1963 this implies a total municipal debt of some \$9.1 billion. This compares with an actual municipal debt of \$5.3 billion at the end of the fiscal year nearest December 31, 1961. In terms of the model described above continuation of the recent rate of growth of municipal debt implies that municipal debt outstanding would eventually amount to about 14 per cent of total financial and other capital assets in private hands or in government-operated sinking funds.

In actual fact, the theoretical model described here applies in an approximate way only. The rate of growth of income varies from year to year, as does the proportion of income saved. Over the past decade, 1953 to 1963, national income in Canada has grown at an average rate of 5.4 per cent, net private Canadian savings have amounted to about 9.0 per cent of national income, and these have been supplemented by foreign savings invested in Canada to the amount of 3.8 per cent of national income. In 1963, net private Canadian savings amounted to 10.2 per cent of national income and total Canadian and foreign savings to 11.7 per cent of national income.

Nevertheless, this analysis suggests important conclusions with respect to the

⁴This refers to primary assets held directly or indirectly. Provincial government securities held by life insurance companies would be counted as held indirectly by policy holders.

significance of recent growth in provincial and municipal debt levels. Assuming a continued growth in national income at a rate similar to that which has prevailed over the past decade, a continuation of recent levels of provincial and municipal borrowing will produce a moderate increase in the ratio of provincial and municipal debt to national income, but eventually this ratio will begin to stabilize. Thus, unless there is some reason to anticipate an increase in the scale of provincial or municipal borrowing in relation to income, there is no ground for expecting a continuing rise in debt levels relative to income. Moreover, the amount of provincial and municipal debt outstanding will eventually become a comparatively con-

TABLE 5:2 Theoretical and actual debt-income ratios, provincial governments, Ontario and all Canada, 1949-61

	Ontario		Canada: all provinces	
	Direct debt	Total debt	Direct debt	Total debt
Increase in debt as percentage of income of period				
1949-55.....	.84%	2.74%	.51%	1.37%
1955-61.....	1.44	2.37	.98	2.78
Theoretical final debt-to-income ratio*				
1949-55.....	.14	.46	.08	.23
1955-61.....	.24	.40	.16	.46
Actual debt-to-income ratios†				
1949.....	.14	.22	.16	.21
1955.....	.13	.25	.12	.20
1961.....	.16	.30	.14	.30

*Assuming income grows at 6 per cent per annum and the growth in debt as a percentage of income continues at the rate recorded during the period.

†Debt, net of sinking funds, at end of fiscal year nearest December 31 as percentage of personal income for Ontario and national income for Canada.

TABLE 5:3 Theoretical and actual debt-income ratios, municipal governments, Ontario and all Canada, 1949-61.

	Ontario	All Canada
	For total debt net of sinking funds	
Increase in debt as percentage of income of the period.		
1949-55.....	1.36%	1.30%
1955-61.....	1.64	1.82
Theoretical final debt-to-income ratio*		
1949-55.....	.23	.22
1955-61.....	.27	.30
Actual debt-to-income ratios†		
1949.....	.07	.08
1955.....	.11	.12
1961.....	.16	.19

*Assumes income growth at 6 per cent per annum and growth in debt as a percentage of income continuing at the rate recorded during the period in question.

†Debt, net of sinking funds, at end of fiscal year nearest December 31 as percentage of personal income for Ontario and net national income for Canada.

stant proportion of the total net volume of capital and financial assets in the hands of the public.

A convenient summary of actual and expected debt-income ratios for provincial and municipal governments in Ontario and in Canada as a whole is given in Tables 5:2 and 5:3.

These tables give some indication of how much further provincial and municipal debt-income ratios can be expected to rise as a result of a continuation of recent rates of borrowing.

Using somewhat simplified assumptions it is possible to provide a rough rule-of-thumb guidance to the net debt burden involved for different levels of borrowing. Thus, if we assume that the rate of growth of income, r , and the interest rate paid by the province or municipality coincide, continued growth on a pattern where the government borrows a constant percentage of income will eventually produce a result where the annual amount borrowed by the government and the annual interest and amortization charges on outstanding debt are the same constant percentage of income. This result would only hold true to the extent that a higher level of borrowing did not weaken the credit rating of the provinces or municipalities and force them to pay a higher rate of interest.

Within a significant range the ability of a province or municipality to service a given debt burden depends on the government's willingness and ability to finance the annual burden of interest and amortization charges. There appears to be no reason why a province might not borrow continuously at a rate equal to 3 per cent of income, assuming it could safely anticipate continued growth at the rate postulated, as long as it was able and willing to meet an annual debt burden equal to 3 per cent of income. No precise outside limits can be set to the volume of provincial and municipal borrowing that could safely be financed. However, past experience suggests that direct borrowing is unlikely to exceed a level of 3 per cent of income, and if indirect debt of the provinces is included, perhaps no more than 5 per cent.

Would a provincial and municipal borrowing program equal to 3 per cent of income create a direct debt burden that would prove difficult for these governments to handle? Would there be any difficulty in marketing provincial and municipal securities in this volume along with additional provincially guaranteed securities amounting to 1.5 or 2 per cent of income? It seems clear that the answer to both of these questions is no. It is true that current debt charges are much lower than this. Thus, in 1962 net interest payments were only .9 per cent of income for all provinces and municipalities, and the addition of amortization payments would probably not raise this to more than 1.2 per cent. However, the total includes a number of provinces where the net interest burden is zero or negative. In contrast, in 1960 in New Brunswick the provincial government and its municipalities were already budgeting for an interest and amortization payment of just about 3 per cent of income. But current debt charges are much lower than they were in 1929 both in relation to income and to government revenues (see Table 4:6). In 1962 the net interest burden of all provinces and municipalities was only about 9 per cent of their total revenues, little more than one-third of the 26 per cent level that existed in 1929.

Although some writers have taken the view that market attitudes limit the volume of provincial and municipal government securities that can be sold in the Canadian market, this view must be questioned. It may have some validity when one province or municipality attempts to borrow on a much larger scale in relation to its income and population than is true for the rest of Canada. But if there was a general increase in municipal and provincial borrowing in a period when business and other private borrowing had declined, it is clear that the capital market would have to adjust itself to this change in the relative supplies of different types of securities. If there is a larger volume of government securities being offered and a smaller volume of corporate and other securities the market will adjust its preferences sufficiently to absorb this different proportion. Moreover, as was pointed out above, a moderate increase in the rate of provincial and municipal borrowing will lead to some increases in the ratio of provincial securities to the total volume of securities available but this ratio will eventually stabilize.

Changes of this kind would, of course, produce some alteration in the market structure of interest rates with yields on provincial and municipal securities rising relative to those on corporate and other securities. However, there is little basis on which we can gauge the amount of this change in rates. Further, where an individual province found it necessary to pursue a fiscal policy pattern different from that which prevailed for the country as a whole so that it was borrowing in periods of high interest rates and redeeming debt in periods of low interest rates there would undoubtedly be some rise in that province's net debt burden. Such an outcome seems unlikely. A more common pattern would be one in which a province found it necessary to restrain its own expenditure during a boom period when interest rates were comparatively high and increase them in a period of slack following the boom when lower interest rates were in effect. In these circumstances the province's net debt burden would be reduced and its credit position strengthened. In addition, to the degree that all provinces found themselves borrowing a larger amount on the average in pursuing a more active fiscal policy there would be some increase in the interest rates they would have to pay. Still, given the comparatively strong credit position that exists today for most provinces and municipalities it seems unlikely that this would prove a significant barrier to the provinces' pursuit of a more active fiscal policy.

It may also be useful to estimate the volume of provincial and municipal borrowing that will take place over the next decade if recent borrowing trends continue. Let us assume that Canada's national income grows at the average rate of 5 per cent per year over the next decade. The amount of provincial and municipal borrowing that would take place at borrowing rates of 3 per cent and 5 per cent of annual income would be approximately as follows:

Provincial and Municipal Borrowing		
	3% rate	5% rate
	billions of dollars	
1964-68	5.7	9.5
1969-73	7.2	12.1
1964-73	12.9	21.6

Thus, over the ten-year period 1964 to 1973 a borrowing rate equal to 3 per cent of income would cause provincial and municipal debt to increase by \$12.9 billion; a borrowing rate of 5 per cent would result in a debt increase of \$21.6 billion. It is of some interest to compare these amounts with the fund that will be accumulated under the Canada Pension Plan, a fund which is to be available for the purchase of provincial and municipal securities. While no exact estimates of the fund that will accumulate under the Canada Pension Plan are available, newspaper reports suggest a fund in the range of from \$4 to 5 billion to be accumulated over the next decade. Comparison of this amount with the estimate of the probable size of municipal and provincial borrowing over the next decade, something in the range from \$13 to 22 billion, makes it clear that the Pension Fund is unlikely to have any significant effect on the market for provincial and municipal government securities. Indeed, it will represent so small a part of the total borrowing requirements of these governments as to make it difficult to understand why it has received so much emphasis.

Provincial and municipal governments that are faced with a continuing program of capital expenditures can choose between a pay-as-you-go approach under which they finance the entire program out of current revenues, and a capital budgeting approach under which they finance their capital expenditures out of borrowing and include in their current budget interest and sinking-fund payments on the debt. Or, as a number of governments seem to do, they may finance these expenditures partly by borrowing and partly out of current revenues. The effects of these alternative approaches can be considered both from the point of view of the borrower and that of the economy as a whole.

From the point of view of the borrower it is clear that a pay-as-you-go approach will allow the government in question to entirely avoid a substantial interest cost. For under a continuing borrowing program annual interest and amortization payments will increase by the end of the sinking-fund period to about the same size as the annual capital expenditures. They will exceed the amount of the capital expenditures—assuming these remain a constant proportion of income—if the government's interest rate exceeds the annual growth rate; they will be below this amount if the reverse is true (see Table 5:1). Thus, the borrowing approach enables the government to defer raising its tax rate, but eventually the tax rate will be about the same level under either approach.

From the point of view of the economy as a whole these two approaches have substantially different effects. Under the pay-as-you-go approach, these governments will not be competing for the available supply of Canadian savings. If the economy is operating at or near a full employment level and is resorting in some degree to foreign capital markets to finance its current capital expenditures, the pay-as-you-go approach will leave a larger share of Canadian savings in a position to finance private capital spending in Canada and this will reduce the extent to which it is necessary to resort to foreign capital. On the other hand, in periods of economic slack the borrowing approach will provide a greater stimulus to the economy. Thus, as was pointed out in Chapter 2, the best interests of the economy would be served by an alternation between the borrowing and pay-as-you-go approach on a counter-cyclical basis, with provincial and municipal governments

following a pay-as-you-go approach in periods of economic boom and a borrowing approach in periods of slack.

From the point of view of the individual province, as was pointed out earlier, there may be an advantage in following a borrowing approach since this implies a lower level of taxation within the province for a period of some years and this will increase the demand for resources within the provinces and thus lead initially, at least, to a more rapid growth than would occur under the pay-as-you-go alternative.

Before concluding this analysis of the debt position of provincial and municipal governments, it will be useful to examine briefly the significance of government borrowing outside of Canada. As data presented earlier indicated, during the past decade a number of provincial and municipal governments have borrowed extensively in the United States capital market. Where Canadian savings institutions place limits on the amount of securities they will acquire from any one government, a resort to the United States market may be the easiest way for the government in question to obtain additional funds. In addition, when, as has been true over much of the past decade, interest rates in the United States market are markedly lower than those in Canada, there is an important financial incentive to borrow outside of Canada. Thus, on a thirty-year bond issue, an interest saving of 1 per cent on the coupon rate will amount to 30 per cent of the original value of the issue over the term of the bond issue. This is a very substantial saving and would offset all but a very extreme exchange depreciation. Moreover, at times, and this may well be true at present, there may be as much chance that the exchange rate will appreciate as depreciate, in which case the exchange risk of borrowing is almost negligible. All this suggests that provincial and municipal governments should borrow freely in the United States market when there is a financial incentive for them to do so.

Nor need such a policy be in conflict with the best interests of the Canadian economy as a whole. Now that Canada has returned to a fixed exchange-rate policy the Bank of Canada is much less free to pursue a policy of monetary ease than was true under the floating rate, for easier money in Canada might lead to a cessation of the capital inflow needed to finance our current account deficit and thus cause a drain on our exchange reserves. Yet it is clear that the Bank of Canada could maintain a lower interest-rate level in Canada if the provinces, the municipalities, and other borrowers were ready to borrow freely in foreign capital markets whenever interest rates in Canada rose appreciably relative to those abroad. Indeed, the federal government could sustain such a position if it was willing to shift its own borrowing to foreign markets whenever interest rates in Canada rose appreciably above those in foreign markets. At the present time (May 1964), interest rates on long-term Government of Canada bonds are still about one percentage point above those on United States government securities of comparable term. If the federal government, in co-operation with the provinces and municipalities, were to adopt a policy of doing all its borrowing in the United States market whenever the spread exceeded one-quarter of one per cent, the Bank of Canada would be free to push Canadian interest rates down by about three-quarters of one per cent. In view of the significant volume of unemployment

that still exists, adoption of such a policy would be beneficial to the Canadian economy and it would clearly provide a very substantial interest saving for provincial and municipal governments. In view of the interest equalization tax recently enacted by the United States Congress, adoption of such a policy would require some understanding with United States authorities. Removal of the 15 per cent withholding tax on bond interest would also be required. The provinces should take the initiative in impressing upon the federal government the desirability of such a policy.

To sum up, it is a contention of this analysis that a continuation of recent borrowing levels on the part of provincial and municipal governments will not lead to an inordinate increase in the debt levels of these governments. There will be some further rise in the level of debt and net debt charges as a ratio to income, but in the growing economy that we can confidently anticipate these ratios will gradually stabilize as will the proportion of provincial and municipal securities in over-all investment portfolios. It has also been argued, and data have been presented to support the view, that most of the Canadian provinces are in a comparatively strong borrowing position. Indeed, there appears to be reason to suppose that, with the possible exception of the Atlantic provinces, they have ample power to pursue a moderate counter-cyclical fiscal policy out of their own resources. Because of their limited taxing powers the municipal governments are in a much weaker credit position; hence, counter-cyclical fiscal policy at this level will probably require assistance from senior levels of government.

MATHEMATICAL APPENDIX

A Model Designed to Illustrate the Effects of Continuous Government Borrowing in a Growing Economy

Let us assume that income is growing at a constant percentage rate, r . Then income in successive years will be:

$$Y, Y(1+r), Y(1+r)^2, \dots, Y(1+r)^{n-1}$$

Assume that each year the government borrows a constant proportion of income, b . Then the amount borrowed in any year n will be:

$$B_n = b \cdot Y(1+r)^{n-1}$$

If we assume a zero debt position at time zero (beginning of year one), then the accumulated debt after a period of years will equal the sum of these annual borrowings. This will also be equal to the sum of the national income over the same period of years multiplied by b , the proportion of income borrowed each year. Using the formula for the sum of a geometric progression we find that the sum of income over n years is given by:

$$Y \left[\frac{1 - (1+r)^n}{1 - (1+r)} \right] = Y \left[\frac{(1+r)^n - 1}{r} \right]$$

The accumulated debt over n years will be b times the above amount. The ratio of debt D to income Y after n years of borrowing will be as follows (ratio of amount borrowed over n years to income in the year $n + 1$):

$$\frac{D_n}{Y_{n+1}} = \frac{b \cdot Y[(1+r)^n - 1]}{r \cdot Y \cdot (1+r)^n} = \frac{b}{r} \left[1 - \frac{1}{(1+r)^n} \right]$$

As n becomes large this ratio approaches b/r .

If a constant interest rate is assumed throughout the period during which the debt accumulates, then the annual interest payment due on the debt after n years of borrowing will equal the accumulated debt multiplied by the interest rate, i . Thus, the debt interest I_n in year n will be as follows:

$$I_n = i \cdot b \cdot Y \left[\frac{(1+r)^n - 1}{r} \right]$$

And the ratio of debt interest, I_n , to income in years $(n+1)$ will be given by:

$$\frac{I_n}{Y_{n+1}} = i \cdot \frac{b}{r} \left[1 - \frac{1}{(1+r)^n} \right]$$

And this expression will approach $i b/r$ as n becomes very large.

¹The analysis in this section owes a great deal to the pioneer work of E. D. Domar. See Domar, *Essays in the Theory of Economic Growth* (Oxford, 1956), especially chapters II and VI. I am indebted to Professor E. Vogt for checking the calculations in this appendix and for assistance in developing several of the proofs.

Thus far a growth in debt has been assumed without provision for repayment. However, provincial and municipal governments normally make sinking-fund or other provisions for debt repayment. Let us now assume that as it borrows the government also sets aside annually in a sinking fund an amount sufficient to accumulate to the amount of the original borrowing after a period of years, a .

Let x , where $x = \frac{i}{(1+i)^a - 1}$, represent the amount which must be set aside

annually for a years in order to accumulate to \$1 after a given number of years, a , at a given interest rate, i per annum. Interest is assumed to be compounded annually.

Let us consider first instances where a is equal to or exceeds n .

After a period of n years of continuous borrowing the annual sinking-fund payment P will be equal to x multiplied by the accumulated debt or to:

$$P_n = x \cdot b \cdot Y \left[\frac{(1+r)^n - 1}{r} \right]$$

Assume for simplicity that the sinking-fund payments for a given year are made at the beginning of the following year, then the ratio of sinking-fund payments, P , at the end of n years to new borrowing B in the following year will equal:

$$\frac{P_n}{B_{n+1}} = \frac{x \cdot b \cdot Y \left[\frac{(1+r)^n - 1}{r} \right]}{b \cdot Y \cdot (1+r)^n} = \frac{x}{r} \left[1 - \frac{1}{(1+r)^n} \right]$$

It must be noted that this latter expression does not approach the value x/r as n becomes very large. Instead it approaches the value zero, for as n becomes very large the value of x approaches zero, under the condition that a is equal to or greater than n .

Similarly it can be shown that the ratio of sinking-fund payments, P , plus interest payments, I , to new borrowings, B , in the following year will be given by:

$$\frac{P_n + I_n}{B_{n+1}} = \frac{x+i}{r} \left[1 - \frac{1}{(1+r)^n} \right]$$

This expression approaches i/r as n becomes very large.

In the same way it can be shown that the ratio of sinking fund payments, P , plus interest payments, I , to income, Y , in year $N+1$ will be given by:

$$\frac{P_n + I_n}{Y_{n+1}} = \frac{x+i}{r} \cdot b \left[1 - \frac{1}{(1+r)^n} \right]$$

And this reduces to $i \cdot b/r$ as n becomes very large with x again approaching zero under the condition that a , the amortization period, equals or exceeds n .

Instances where n exceeds a .

As soon as n exceeds a , the total debt accumulated since the beginning of the borrowing program will start to be reduced as the sinking funds mature and permit the retirement of any debt incurred more than a years earlier.

The total debt outstanding, D , in any year n will now be given by the expression:

$$D_n = b \cdot Y \left[\frac{(1+r)^n - 1}{r} \right] - b \cdot Y \left[\frac{(1+r)^{n-a} - 1}{r} \right]$$

$$\text{or } D_n = \frac{b \cdot Y}{r} \left[(1+r)^n - (1+r)^{n-a} \right]$$

To obtain the ratio of debt to income we divide the above expression by income in year $n+1$. The result is as follows:

$$\frac{D_n}{Y_{n+1}} = \frac{b}{r} \left[1 - \frac{(1+r)^{n-a}}{(1+r)^a} \right] = \frac{b}{r} \left[1 - \frac{1}{(1+r)^a} \right]$$

Similarly, it can be shown that the ratio of sinking-fund payments P at the end of n years to new borrowing B in the following year will be given by:

$$\frac{P_n}{B_{n+1}} = \frac{x}{r} \left[1 - \frac{1}{(1+r)^a} \right]$$

Likewise it can be demonstrated that the ratio of interest payments on the debt, I , plus sinking-fund payments to new borrowings B will be given by:

$$\frac{P_n + I_n}{B_{n+1}} = \frac{x+i}{r} \left[1 - \frac{1}{(1+r)^a} \right]$$

And the ratio of sinking-fund payments, P , in year n plus interest on the debt, I , in year n to income, Y , for year $n+1$ will be given by:

$$\frac{P_n + I_n}{Y_{n+1}} = \frac{x+i}{r} \cdot b \left[1 - \frac{1}{(1+r)^a} \right]$$

Finally, it is possible to prove that the ratio, $\frac{P_n + I_n}{B_{n+1}}$ will be equal to 1, if i , the rate of interest, is equal to r , the rate of growth, will exceed 1 if i is greater than r , and will be less than 1 if r exceeds i .

The proof is as follows. Substituting the value for x , given above, the value for this ratio becomes:

$$\begin{aligned} \text{Ratio} &= \frac{i}{r} \left[\frac{(1+i)^a}{(1+i)^a - 1} \right] \left[\frac{(1+r)^a - 1}{(1+r)^a} \right] = \frac{i}{r} \left[\frac{1 - (1+r)^{-a}}{1 - (1+i)^{-a}} \right] \\ &= \frac{(1+r)^{-1} + (1+r)^{-2} + \dots + (1+r)^{-a}}{(1+i)^{-1} + (1+i)^{-2} + \dots + (1+i)^{-a}} \end{aligned}$$

The required proof is evident from a term-by-term comparison of the last expression.

CHAPTER 6

Federal-Provincial Financial Arrangements and the Theory of Fiscal Policy

THE present pattern of federal-provincial financial relations reflects developments over the past three decades. In particular it has been an outgrowth of the Great Depression and the Rowell-Sirois Royal Commission on Dominion-Provincial Relations, the war-time tax agreements, the post-war Conference on Reconstruction, and the successive series of five-year financial arrangements between the federal government and the provinces that have been negotiated since that time. Before attempting to evaluate Canada's present position in this field it will be useful to summarize briefly these earlier developments.

The federal government in Canada did very little during the 1930's to offset the effects of the Depression, confining itself mainly to a bailing-out operation. Responsibility for providing relief for the unemployed was left primarily to provincial and municipal governments with the federal government providing some assistance when the rising debt burdens of the latter governments threatened to make it impossible for them to meet relief costs. As a result the provinces were forced to run substantial deficits throughout the entire decade of the thirties although the municipalities began to register small surpluses (on a National Accounts basis) after 1933. The failure of the federal government in Canada to take effective action to offset the effects of the Depression is in decided contrast to the measures taken by the Roosevelt administration in the United States. As a result of this latter action, after 1933 United States state and local governments, relieved of a major share of the burden of unemployment, were able to run moderate surpluses.

The difference in the fiscal policy pursued by the federal governments in the two countries is evident from the data in Table 6:1. The major difference lies in the much larger increase in federal expenditure on goods and services that took place in the United States during the thirties. Thus, by 1939 federal spending for goods and services in the United States was almost four times as high as it had been in 1929, whereas in Canada the comparable increase was 34 per cent, all due to the rise in war expenditure. The pattern of deficits for the two countries is not too dissimilar although the United States registered relatively smaller deficits up until 1933 and relatively larger ones thereafter. Thus, the bulk of the greater stimulation provided by the Roosevelt administration's spending policies was basically a balanced-budget multiplier effect.

The Royal Commission on Dominion-Provincial Relations, sitting as it did in the later thirties, produced a report which gave an undue emphasis to the problems associated with severe depression, showed little evidence that its thinking had been influenced by the newer trends in economic theory associated with the

Deficit (—) or surplus as percentage of gross national product					
	Canada	United States		Canada	United States
1929.....	.9	1.1	1935.....	—2.9	—3.5
1930.....	—1.7	.3	1936.....	— .9	—4.2
1931.....	—3.5	—2.8	1937.....	.1	— .2
1932.....	—4.1	—2.5	1938.....	—1.7	—2.3
1933.....	—3.3	—2.3	1939.....	— .1	—2.4
1934.....	—2.4	—4.4			

Federal expenditures on goods and services			
	1929	1933	1939
	millions of dollars		
Canada.....	159	115	213
United States.....	1,311	2,018	5,157

Source: *National Accounts: Income and Expenditure*, 1926-56, Dominion Bureau of Statistics, Ottawa; *National Income*, 1954 edition, United States Department of Commerce.

A further major recommendation, that the federal government should take over entire control of the personal and corporate income tax, would, if it had been implemented, have had a strong centralizing influence on the whole structure of Canadian government. For the personal income tax, in particular, has a very large growth potential. Loss of both the personal and corporate income tax would have seriously weakened the taxing power of the provinces. In exchange all they would have received would have been the National Adjustment Grants, uncertain in amount and entirely outside the provinces' control; a relief from their net debt charges which were soon to decline significantly; and relief from the problem of supporting the employable unemployed. This latter gain was not a substantial one, for unemployment relief virtually disappeared under the impact of war expenditures and is unlikely ever again to become the burden it was in the 1930's.

One significant contribution of the Commission was the formula it proposed

for the equalization of revenues among the various provinces. Specifically, it recommended that adjustment grants should be paid to the various provinces which would allow them to maintain a level of provincial and municipal services at the average Canadian standard without imposing tax rates higher than the average level for all provinces. This suggestion was to lead eventually to the equalization payments that are now a regular part of federal-provincial financial arrangements.

Under the exigencies of war the provinces all agreed to vacate the personal and corporate income tax field for the duration of the war in return for certain revenue guarantees. The agreements included an undertaking on the part of the federal government to reduce its personal and corporate income tax rates within a year of the war's end to an extent that would allow the provinces to reoccupy these fields. But when the war was over the federal government showed a reluctance to abandon its dominant position in these tax fields. At first it justified its continued use of a dominant share of these taxes on the grounds that federal control over these taxes was essential to an effective fiscal policy designed to maintain a high level of employment. A few years later it was to justify its continued retention of this revenue on the grounds that it was needed to finance its heavy defence expenditures.

In the Conference on Reconstruction called in 1945 the federal government outlined to the provinces a detailed set of revenue and expenditure proposals. On the revenue side the provinces were offered a flat per-capita payment, originally \$12 per capita, which was to increase in line with the growth in gross national product. In exchange, the provinces were to assign to the federal government for a period of years the exclusive use of the three direct tax fields, the personal and corporate income tax and succession duties. On the expenditure side the federal government proposed to accept complete responsibility for unemployment benefits and for old age pensions to people over seventy, offered to share the cost of means-test pensions for people aged sixty-five to sixty-nine, and to share 60 per cent of the cost of approved health insurance schemes, and suggested a series of grants-in-aid for public health, hospital construction, and public investment. If accepted, the latter proposals would have involved an extensive intervention by the federal government into areas allocated under the constitution to the provincial governments.

When the provinces proved unwilling to accept this package deal the federal government proceeded to negotiate tax-rental agreements with individual provinces. Under these agreements the provinces agreed to allow the federal government exclusive use of the direct tax field for a five-year period in exchange for a rental payment the basic component of which was a per-capita payment to be increased in line with the growth of gross national product. Provinces that remained outside the agreement could impose a 5 per cent tax on corporate income and could levy a tax on personal income equal to 5 per cent of the federal rate and have both offset against the federal tax. This meant, in effect, that the federal government believed it was entitled to retain control over some 95 per cent of the revenue from the personal income tax and about 80 per cent of the corporate income tax revenue. The 1945 expenditure proposals were dropped, although in subsequent years a number of the grant-in-aid programs were adopted, notably grants for

public health and hospital construction, for the Trans-Canada Highway, for means-test pensions, and much later for a hospitalization scheme. In addition, in 1952 after an amendment to the British North America Act agreed to by all provinces, the federal government began paying pensions to all Canadians over seventy.

With a few modifications the tax-rental agreements were renewed for a further five-year period beginning in 1952. Both Ontario and Quebec had remained out of the first set of agreements, but Ontario entered the second set. While there was a moderate increase in the size of the payments, in 1955 the provinces were still receiving only 19 per cent of the revenue collected in the three direct tax fields. Provision was made in both sets of agreements for a floor under the payments made to the provinces, in the event that a recession should cause a decline in gross national product. However, the floors adopted were largely meaningless. In 1957, for example, a decline in gross national product of about 37 per cent would have had to occur before the floor under the agreement became effective. This is just about the amount that G.N.P. declined between 1929 and 1932. It is a much larger decline than is ever likely to occur again.

At the end of the second set of tax-rental agreements, a new and significantly different set of agreements were negotiated and subsequently signed by all provinces, including Quebec. Under the Federal Provincial Tax-Sharing Arrangements which were in effect from 1957 to 1961, per-capita rental payments were abandoned in favour of a scheme that provided for payments to the provinces as follows:

1. A rental payment covering the personal income tax, the corporate income tax, and inheritance taxes, and calculated on the basis of the yield of a set of standard taxes, namely 10 per cent of federal income tax collections in the province, a corporate income tax of 9 per cent, and succession duties the equivalent of 50 per cent of federal duties in the province. Alternatively, a province could levy its own taxes up to the amount of the standard taxes and receive an abatement of the federal tax of the same amount.

2. An equalization payment to bring the provinces' per-capita yield from the three standard taxes up to the average per-capita yield of these taxes in the two provinces with the highest per-capita yields.

3. A stabilization payment which guaranteed that the provinces' receipts from the equalization payment and the standard taxes would not fall below 95 per cent of their level in the two preceding years. In 1958 the standard personal income tax rate was raised to 13 per cent and provision was made for a Special Atlantic Provinces Adjustment Grant of \$25 million, later raised to \$35 million.

This set of arrangements had a number of advantages. First, they provided for tax equalization on a more regular and systematic basis than was true under the tax-rental agreements. Second, because the revenue received by the provinces was based on the yield of a set of standard taxes the provinces were put in a position to share in the substantial revenue growth potential inherent in the personal income tax. Finally, the stabilization payment provided a much higher and more effective floor under provincial revenues than had been true for the earlier agreements.

When the present set of arrangements were negotiated in 1959, 1960, and early 1961, further substantial changes were made in these agreements. The most basic change was a provision for the federal government to withdraw from the

personal income tax field by progressive amounts ranging from 16 per cent in 1962 to 20 per cent in 1966 and from the corporation income tax field by 9 per cent. In addition, the federal government offered to collect free of charge any taxes levied by the provinces in these fields provided the province adopted a tax base identical with that of the federal government. A province taxing inheritance receives an abatement equal to 50 per cent of the federal tax on inheritances in the province. Alternatively, they may stay out of this field and receive half the yield of the federal tax. All of the provinces have imposed their own corporate and personal income taxes and all but Quebec have signed collection agreements with the federal government. As a result of this change all the provinces are now free to impose additional taxes on personal and corporate income and two provinces, Manitoba and Saskatchewan, have already done so.

Two significant changes were made in the equalization formula. The standard tax formula was expanded to include 50 per cent of a three-year moving average of a province's gross revenue from its natural resources. Further, equalization henceforth was only to be to the average per-capita yield of the standard taxes in all provinces and not to the average of the top two provinces. The stabilization feature of the previous agreement was retained.

Further changes in these arrangements occurred as a result of the federal-provincial conference held in November 1963. Equalization to the level of the standard tax yield in the two top provinces was restored, the formula for including natural resources revenue was modified, and the standard rate for estate taxes was raised to 75 per cent. Following the conference, the federal government proposed that the provinces' share of the personal income tax be raised from 19 to 21 per cent for 1965 and from 20 to 24 per cent for 1966.

As a result of these successive revisions in federal-provincial financial relations there has been a gradual increase in the share of the three direct tax fields that has been received by the provinces. Thus, the provincial share has risen from 15.8 per cent in 1947 to 17.3 per cent in 1953, to 25.0 per cent in 1959, and to 26.4 per cent in 1963. Some further rise in the provincial share will result as the federal government makes a further withdrawal from the personal income tax field, increasing its abatement for the personal income tax from 16 to 24 per cent. These estimates of provincial shares include amounts received under the equalization payments formula.

In the latest round of federal-provincial discussions the proposal has been made that the provinces should be free to opt out of conditional grant programs and finance these programs themselves out of an increased share of the direct tax revenues. Federal contributions to the provinces under conditional grant programs in the fiscal year 1963-64 amounted to \$927 million. Even if we exclude capital grants under the Vocational Training Act for the construction of technical schools, conditional grants amounted to \$769 million. If all provinces were to take advantage of the opt-out provision it would increase the provincial share of the direct tax fields to around 43 per cent. This raises the question of whether the transfer of the direct tax fields may go so far as to impair the effectiveness of federal fiscal policy.

An examination of the growth in expenditures on goods and services at

different levels of government over the period from 1947 to 1962 shows that much the most rapid growth has occurred at the provincial and municipal level (see Table 6:2). Ironically enough, the most rapid growth of all has occurred at the municipal level, the government level that has been in the weakest financial position. In terms of data in constant dollars, municipal expenditures on goods and services rose roughly threefold over the fifteen-year period from 1947 to 1962. But provincial expenditures, too, have risen substantially more than federal expenditures on goods and services. Indeed, federal spending has declined moderately over the past decade, with substantial declines in defence spending only partially offset by the increase in the non-defence sector. Defence spending, which in 1952 amounted to 7.5 per cent of gross national product, had fallen to about 3.5 per cent by the end of 1963.

TABLE 6:2 Government expenditures on goods and services, federal, provincial and municipal, Canada, selected years, 1947-62

	1947	1952	1957	1962
	millions of dollars at 1949 prices			
FEDERAL: Total.....	755	2,045	1,830	1,764
Defence.....	273	1,478	1,183	986
All other.....	482	567	646	778
PROVINCIAL.....	458	595	753	940
MUNICIPAL.....	637	876	1,250	1,824
	1947-52	1952-57	1957-62	
	Percentage increase or decrease			
FEDERAL: Total.....	171%	-10.5%	-	3.6%
Defence.....	442	-20.0	-	16.7
All other.....	17.7	13.9		20.5
PROVINCIAL.....	29.9	26.6		24.8
MUNICIPAL.....	37.6	42.7		45.9
Defence expenditures as percentage of gross national product.				
	1947	1952	1957	1962
	1.7%	7.5%	5.5%	4.2%
				4Q. 1963
				3.5%

Source: *National Accounts: Income and Expenditure*, 1926-56 and 1962.

Note: Expenditure data were deflated by the implicit price index for all government expenditures.

It is clear from this picture of rising provincial and municipal expenditures why there has been strong pressure on the part of the provinces for an increased share of the direct tax revenue. This has been reinforced by the growth in welfare transfers, an expenditure area for which primary constitutional responsibility falls on the provinces.

In an earlier period the federal government defended its retention of a major share of the revenue yielded by the personal and corporate income tax on the grounds that, first, this was needed for an effective fiscal policy to combat unemployment and second, the heavy defence program to which it was committed required major revenue sources. In view of the steady decline in the relative importance of defence spending it is clear that the latter argument no longer carries any substantial weight. Further, it appears increasingly likely that the kind of cyclical declines for which federal fiscal policy measures are needed will be moderate

enough to allow scope for effective fiscal action by the federal government even though it retained only half of the revenue yielded by the personal and corporate income tax. In 1963 these two taxes yielded close to \$3 billion in revenue. Even half of this amount would allow room for a substantial federal tax cut. And if the provinces can be persuaded to take a more active counter-cyclical role the need for federal action will be correspondingly reduced. Moreover, the transfer to the provinces of a larger share of these taxes would give their budgets a larger measure of built-in stability, and this would automatically complement any discretionary federal fiscal action.

Fears have been expressed by some federal Cabinet ministers that a tax cut in Canada would be rendered ineffective because it would be largely or fully offset by an increase in provincial tax rates. While it is true that the additional tax room provided by a federal tax cut might tempt the provinces to raise their personal and corporate income tax rates, it is not true that this action would necessarily fully offset the federal action. For if the provinces merely raised these taxes as an alternative to increasing other taxes the result would be a change in the tax structure but not necessarily any change in the tax level that would otherwise have prevailed at the provincial level. Alternatively, if the additional tax room led to an increase in both taxes and expenditures at the provincial level there would still be a net stimulus to the economy. If the additional expenditures were for goods and services the net impact of the federal tax cut might be reinforced. If the expenditures were of the income transfer type, the net result would be to leave the effects of the federal tax cut unchanged except to the extent that the redistribution of income involved affected the level of consumer spending. Only if the provinces used the increased tax room to shift from borrowing to taxation would there be a clear adverse effect. And it seems most unlikely that the provinces would want to achieve such a result. Finally, it should be noted that none of these arguments will apply if the federal government provides a tax holiday to give a temporary stimulus to the economy.

To sum up, recent developments in federal-provincial financial arrangements should not prove a barrier to an effective Canadian fiscal policy designed to promote the threefold objective of low levels of unemployment, stable prices, and an adequate rate of economic growth. Even if as much as half of the revenue from the personal and corporate income tax were allocated to the provinces the federal government would still retain sufficient power to deal with the kind of cyclical fluctuations Canada is likely to encounter. Further, the stabilization provision in the present financial agreements provides an effective floor under provincial revenues and substantially strengthens their credit position. This places them in a better position to co-operate with the federal government in pursuing an effective fiscal policy.

CHAPTER 7

Summary and Conclusions

AN analysis of the economic position of the Canadian provinces supports the view that each provincial government should have an active fiscal policy directed primarily toward the three major goals of a low level of unemployment, reasonable stability of prices, and an adequate rate of economic growth. This is particularly true for the two largest provinces, Ontario and Quebec, both of which are as large economically as many independent countries and have economies that are sufficiently diversified to limit the important leakages from such a policy. Although their ability to pursue a positive policy is not as strong as that of the federal government, in most respects their position differs in degree rather than kind from that of the national governments in smaller European countries.

An active provincial fiscal policy is desirable, not only because many important powers come within their jurisdiction but because there may often be need for regional variations in the effects of fiscal policy and the provinces are in the best position to introduce these variations. Moreover, with the provinces actively interested in the problems of fiscal policy it will be easier to secure effective federal-provincial co-operation in this area.

In pursuing fiscal policy goals it is recommended that the provinces continue a capital budgeting approach but that they be prepared to introduce counter-cyclical variations in the size of their capital spending program and the proportion of it financed out of current revenues. A reasonable over-all goal for provincial fiscal policy would be to try and keep output and employment growing along the estimated longer-term path of potential full employment output for the province, defined on the assumption that other provinces are pursuing and achieving a similar objective.

In order to obtain better co-ordination between federal and provincial fiscal policy it would be desirable to have the Economic Council or some similar body sponsor an annual pre-budget conference of finance ministers and their advisers at which the economic outlook could be evaluated and the general pattern of appropriate fiscal policy could be set forth. Achievement of an effective fiscal policy at the provincial level will call for a major strengthening of the economic staff of many provincial governments. There is also need for a systematic program of joint federal-provincial grants toward the cost of municipal capital expenditures designed on a permanent basis with a provision for the size of the grant to be increased in periods of economic slack.

As long as provincial cyclical policy is pursued in co-operation with appropriate federal fiscal policy it is unlikely to encounter any significant difficulties. For in these circumstances it can be assumed that a complementary and supporting monetary policy will accompany the fiscal measures. Thus, in periods of recession an

increase in the federal deficit accompanied by an easier monetary policy will make capital markets more receptive to additional provincial borrowing as well. A more difficult but more unlikely case would be one where federal fiscal measures were inadequate and the provinces felt obliged to take measures that might well have been taken by the central government. Here, in periods of economic slack the provinces would face the hard decision of determining how much they were justified in increasing their debt burden in order to reduce unemployment levels. This was the situation that faced the provinces in the 1930's and the pressure of mounting unemployment forced them to increase their debt burden very substantially. However, it seems unlikely that such a *déréllection* of duty on the part of the federal government will occur again. Moreover, if the provinces are more actively interested in fiscal policy they will be in a position to bring pressure to bear on the federal government if they feel the latter's policy is inadequate.

Where, as will likely be the more normal occurrence, provincial fiscal policy is used to supplement the effects of federal policy in order to iron out in some degree the different amplitude and timing of cyclical fluctuations in different parts of the country, care will need to be taken to see that provincial fiscal policy measures do not interfere with the longer-run patterns of efficient regional growth. Some areas may have to accept higher average levels of unemployment in order to provide an incentive for labour to move to areas where it can be more efficiently utilized. Other regions may have to accept, at times, some margin of excessive demand in order to provide an incentive for labour to move in.

Although provincial and municipal governments have had a reputation for pursuing perverse fiscal policies, an examination of the evidence gives only limited support to this view. Over the mild cyclical swings experienced since the War their budgets have shown a moderate counter-cyclical pattern, and the strong upward growth trend in their expenditures has given very substantial support to the economy.

If the provinces are to pursue an independent fiscal policy they must be in a position to finance the resulting deficits. Examination of the present debt position of the provinces shows that, despite the very substantial borrowing a number of provincial governments have carried out in recent years, the current credit position of the provinces is quite strong when compared either with their position in earlier historical periods or with the debt position of other levels of government.

Further, a theoretical analysis of the results that will ensue from a continuation of provincial borrowing at levels such as have prevailed in recent years indicates that although present debt levels as a ratio to income will rise further, this ratio will eventually stabilize, as will the proportion of provincial securities to total investment assets. Thus, there is little reason to anticipate any real difficulty for the provinces in financing their capital expenditure requirements or in pursuing a moderately counter-cyclical fiscal policy. Although the municipalities are in a somewhat weaker credit position, they too should be able to finance their capital expenditures without any genuine difficulty.

Nevertheless, the borrowing requirements of the provinces and municipalities over the next decade may be very large. A rough estimate places the amount of this borrowing in the range of from \$15 to 20 billion. Comparison of these

amounts with the investment fund of \$4 to 5 billion which it is anticipated will be accumulated under the Canada Pension Plan makes it evident that the latter plan will have no very substantial effect on the credit position of the provinces.

It is also recommended that the provinces co-operate with the federal government in making their borrowing much more sensitive to interest differentials between Canada and the United States, thus enabling the Bank of Canada to maintain a lower level of interest rates in Canada. Indeed, it should be possible to reduce present interest-rate levels in Canada by up to a half a percentage point with considerable benefit to the long-run credit position of the provinces and municipalities.

The general trend of federal-provincial financial relations over the past few years has been in the direction of allocating an increasing share of the revenue from the personal and corporate income tax to the provinces. If the recent suggestion that provinces be allowed to opt out of federal conditional grant programs and finance them on their own out of an additional share of the personal and corporate income tax were fully implemented it is possible to foresee a situation where the federal government would be left with little more than half of the revenue from these two important direct taxes. Even in this situation, however, there is reason to believe that the federal government would still be in a position to pursue an effective fiscal policy. And the provinces, with increased sources of revenue and more built-in flexibility in their budgets, would be in a stronger position to co-operate in achieving an effective fiscal policy.

